

Mandatory Pre-Qualification requirements for RTD for PW Header as per BH&L specification TG60054 (Material code: W95413500425)

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 –

Sl 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 the P.O. submitted as per clause 2.
- 4.0 Vendor to furnish acceptance certificate from the end users of RTD for PW Header against 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 RTD as per BHEL specification
TG60053 (Material code-W96413500778)**

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 200 C
(iv)	Protective Sheath and Extension pipe	SS316 or equivalent
(v)	Resistance element	Resistance value and tolerance class-A 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
TG60053 (Material code-W96413500778)

- 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	Type of RTD			

- 3.0 Vendor to furnish correlated test certificates against the P.O. submitted as per clause 2.
- 4.0 Vendor to furnish acceptance certificate from the end users of RTD against 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.
- 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
- 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 Routine/Type tests or agree to carry out at NABL/ILAC/APLAC approved lab and provide the details for the same.
- 8.0 Vendor shall confirm to meet all the technical requirements of Specification TG60053.

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 Three wire simplex-PRTD as per BHEL specification TG60468 (Material code- W96413508566)

Description:

The three-wire simplex flat platinum resistance temperature detector is used in generators 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 three-wire simplex 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	Each conductor shall be twisted from 19 nos strands of bright annealed electrolytic silver plated copper wires of 0.15mm each. Silver plating thickness shall not be less than 1 micron.
(v)	Resistance element	Resistance value and tolerance class-A as per IS 2848. The non-inductive bifilar element shall be wound on thick epoxy former and laid down in glass epoxy sheet in total strain free manner. Empty space shall be filled with alumina paste.
(vi)	HV Test	2.5 kV AC for 1 Min
(vii)	IR Test	Should not be less than 200M ohms when measured with 500VDC meggar at 20C
(viii)	Routine Test	Resistance Accuracy and IR test
(ix)	Type Test	As per IS:2848
(x)	Pull Test	The leads shall be suitably brazed to the resistance element. Each lead shall withstand Pulling force of 2 kg when applied to each of the leads.
(xi)	Compression load	Construction shall be such that it can bear compression load greater than 1 metric ton without any damage.

Mandatory Pre-Qualification requirements for Three wire simplex-PRTD as per BHEL specification TG60468 (Material code- W96413508566)

- 2.0 In support of above serial number-1, vendor shall furnish technical details of three-wire simplex 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 -Leads -Routine Test -Type Test			

- 3.0 Vendor to furnish correlated test certificates against the P.O. submitted as per clause 2.
- 4.0 Vendor to furnish acceptance certificate from the end users of three-wire simplex flat platinum resistance temperature detector against 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 three-wire simplex 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 P.T.Sensor for Header Nipple(RTD)
as per BHEL specification TG60731 (Material code-W96413508612)

Description:

The P.T.Sensor for Header Nipple(RTD) is used in generators for Measurement of temperature of water which is flowing in the stator winding bars. The P.T.Sensor for Header Nipple(RTD) should be of very reliable and proven design for temperature measurement.

- 1.0** The vendor should be a regular manufacturer of such P.T.Sensor for Header Nipple(RTD) with minimum following requirements –

Si No.	Parameter	Value
(i)	Suitable Environment	Tropical, humid and dusty atmosphere
(ii)	Material of Square plate and enclosure for RTD Element	X6CrNiMoTi17122(1.4571)/SS321
(iii)	Operating Temperature (Range)	0 C to 150 C
(iv)	Leads	The leads shall be of 19/0.16mm stranded copper with poly- tetraflouroethylene Insulation (with min. radial thickness of 0.25mm).
(v)	Resistance element	Resistance value and tolerance as per IS 2848. The elements shall be wire wound type using insulated wire and suitably encapsulated in silicon alumina paste and epoxy resin
(vi)	HV Test	1.5 kV AC for 1 Min
(vii)	IR Test	Should not be less than 100M ohms when measured with 500VDC meggar at 20C
(viii)	Routine Test	Resistance Accuracy and IR test
(ix)	Type Test	As per IS:2848
(x)	Pull Test	The leads shall be suitably brazed to the resistance element. Each lead shall withstand Pulling force of 4 kg when applied to each of the leads.

**Mandatory Pre-Qualification requirements for P.T.Sensor for Header Nipple(RTD)
as per BHEL specification TG60731 (Material code-W96413508612)**

- 2.0 In support of above serial number-1, vendor shall furnish technical details of P.T.Sensor for Header Nipple(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	Type of RTD Size of RTD-4X4X30 mm Max.			

- 3.0 Vendor to furnish correlated test certificates against the P.O. submitted as per clause 2.
- 4.0 Vendor to furnish acceptance certificate from the end users of P.T.Sensor for Header Nipple(RTD) against 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 P.T.Sensor for Header Nipple(RTD). Vendor to furnish details of the manufacturing facilities available at their works.
- 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
- 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 Routine/Type tests or agree to carry out at NABL/ILAC/APLAC approved lab and provide the details for the same.
- 8.0 Vendor shall confirm to meet all the technical requirements of Specification TG60731.

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 Thermocouple (W96414200115) as per BHEL specification TG60399

1.0 Experience:

Vendor should confirm that they are Manufacturer of insulated type Triplex NiCr-Ni Thermocouple (K type thermocouple) for bearing temperature monitoring suitable for temperature range of 0-150 °C as per IS:7358, Vendor to furnish supporting documents like Catalogue/ Datasheet etc.

- 2.0 In support of above, vendor shall furnish technical details of thermocouples in below mentioned format for P.O. executed in last 7 years (from date of enquiry). Vendor shall also furnish at least one PO copy from the list.

Sl. No	PO No.	Quantity Nos.	Name & address of customer	PO Date

- 3.0 Vendor to furnish test certificates against P.O. submitted as per clause 2.
- 4.0 Vendor to furnish acceptance certificate or material receipt of Thermocouples against 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 **Manufacturing Facilities:** Vendor shall confirm that they have manufacturing facilities suitable to manufacture the thermocouples as per enquiry and furnish details of the manufacturing facilities available at their works. If the vendor plans to outsource any activity particulars of the same along with details of the sub-vendor/laboratory are to be furnished to BHEL.
- 6.0 **Testing Facilities:** Details of in-house testing facilities (like dimensional measurement, Type tests and Routine tests) as per the requirement of enquiry specification to be submitted with offer. In case of outsourcing of tests, vendor to agree for testing at Government/International agency's accredited labs only.
- 7.0 Vendor shall confirm to meet all the technical requirements of Spec. TG60399.

Note:

- 1) All correspondence shall be in English Language. If any document provided by vendor is in any language other than English, it must be supported with its English translation.

Mandatory Pre-Qualification requirements for Duplex Platinum RTD
(W96414500224,W96414501557)

Description:

The Duplex platinum RTD with PT100 Sensor is used in generators/exciter for Measurement of temperature of ventilation air/gas/water. The PT 100 Sensor should be of very reliable and proven design for temperature measurement.

- 1.0 The vendor should be a regular manufacturer of such RTD with Non inductively wound platinum wire-PT100 with following requirements –

S. No.	Parameter	Value
(i)	Suitable Atmosphere	Tropical, humid and dusty atmosphere
(ii)	Material of Protective sheath for RTD Element	Special Brass(SoMs58A12)/SS316/SS321 or equivalent.
(iii)	Operating Temperature	0 °C to 150 °C (minimum)
(iv)	Terminal head	The terminal/connection head should be die cast Aluminum or light metal alloy with protection class IP65 or better.
(v)	Terminal block	Terminal block should be of ceramic material and fixed inside the terminal head with the help of spring loaded fixing screws. The measuring tip of RTD should be pressed inside thermowell in assembled condition with the help of spring loaded fixing screw.
(vi)	Resistance element	Resistance value and tolerance as per IS 2848. Or IEC:60751, Tolerance class A. The Measuring insert should be consist of two resistance elements of non inductively wound platinum wire(PT100). Each resistance element should have nominal resistance of 100 ohms at 0° C. The resistance elements should be embedded with suitable insulating powder/paste in a protective sheath; and connected to PTFE insulated wire by brazing.
(vii)	Routine Test	Resistance Accuracy and IR test
(viii)	Type Test	Thermal response test, Self heating test, Thermo-electric effect test, Drop test, Vibration test, etc.

- 2.0 In support of above, vendor shall furnish technical details of RTD with PT100 Sensor in below mentioned format for P.O. executed in last 7 years (from date of enquiry). Vendor shall also furnish at least one PO copy from the list.

Sl No	PO No.	Quantity Nos.	Size/Dimension of Sensor Element	Material of Sensor Element	Name & address of customer	Date of supply

- 3.0 Vendor to furnish test certificates against P.O. submitted as per clause 2.
- 4.0 Vendor to furnish acceptance certificate or material receipt from one of the customer of RTD with PT100 Sensor against the P.O. submitted as per clause 3. (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 **Manufacturing Facilities:** Vendor shall confirm that they have manufacturing facilities suitable to manufacture the RTD as per enquiry and furnish details of the manufacturing facilities available at their works. If the vendor plans to outsource any activity particulars of the same along with details of the sub-vendor/laboratory are to be furnished to BHEL.
- 6.0 **Testing Facilities:** Details of in-house testing facilities (like dimensional measurement, Type tests and Routine tests) as per the requirement of enquiry specification to be submitted with offer. In case of outsourcing of tests, vendor to agree for testing at Government/International agency's accredited labs only.
- 7.0 Vendor shall confirm to meet all the technical requirements of Mat. codes W96414500224 & W96414501557 per BHEL specification and drawing given in enquiry.

Note:

- 1) All correspondence shall be in English/Hindi Language.
- 2) If any document provided by vendor is in any language other than English/Hindi, it must be supported with its English translation.



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SUB-VENDOR QUESTIONNAIRE/ सब-वेंडर प्रश्नावली

i.	Item/Scope of Sub-contracting उप-संविदा(अनुबंध) का मद/ दायरा			
ii.	Address of the registered office पंजीकृत कार्यालय का पता 	Details of Contact Person संपर्क व्यक्ति का विवरण (Name, Designation, Mobile, Email) (नाम, पदनाम, मोबाइल, ईमेल)		
iii.	Name and Address of the proposed Sub-vendor's works where item is being manufactured प्रस्तावित उप-विक्रेता के कार्यों का नाम और पता, जहां मद का निर्माण किया जा रहा है 	Details of Contact Person: संपर्क व्यक्ति का विवरण (Name, Designation, Mobile, Email) (नाम, पदनाम, मोबाइल, ईमेल)		
iv.	Annual Production Capacity for proposed item/scope of sub-contracting उप-संविदा(अनुबंध) के प्रस्तावित मद / दायरे के लिए वार्षिक उत्पादन क्षमता			
v.	Annual production for last 3 years for proposed item/scope of sub-contracting उप-संविदा(अनुबंध) के प्रस्तावित मद / दायरे के लिए पिछले 3 वर्षों का वार्षिक उत्पादन			
vi.	Details of proposed works प्रस्तावित कार्यों का विवरण			
1.	Year of establishment of present works वर्तमान फैक्टरी की स्थापना का वर्ष			
2.	Year of commencement of manufacturing at above works उपरोक्त फैक्टरी में निर्माण कार्य शुरू होने का वर्ष			
3.	Details of change in Works address in past (if any) पूर्व में फैक्टरी स्थल में परिवर्तन का विवरण (यदि कोई हो)			
4.	Total Area कुल क्षेत्र			
	Covered Area शामिल क्षेत्र			
5.	Factory Registration Certificate फैक्टरी पंजीकरण प्रमाण पत्र	Details attached at Annexure – F2.1 विवरण अनुलग्नक- एफ 2.1 पर संलग्न है		
6.	Design/ Research & development set-up डिजाइन / अनुसंधान और विकास सेटअप (No. of manpower, their qualification, machines & tools employed etc.) (श्रमिकों की संख्या, उनकी योग्यता, मशीन और उपलब्ध उपकरण आदि)	Applicable / Not applicable if manufacturing is as per Main Contractor/purchaser design) Details attached at Annexure – F2.2 (if applicable) लागू / लागू नहीं, अगर विनिर्माण मुख्य संविदाकार / खरीददार के डिजाइन के अनुसार है) विवरण अनुलग्नक –एफ 2.2 पर संलग्न है ।		



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		(यदि लागू हो)
7.	Overall organization Chart with Manpower Details (Design/Manufacturing/Quality etc) मैनेपावर विवरण के साथ समग्र संगठन का चार्ट(डिजाइन / विनिर्माण / गुणवत्ता आदि)	<i>Details attached at Annexure – F2.3</i> विवरण अनुलग्नक – F2.3 में संलग्न है ।
8.	After sales service set up in India, in case of foreign sub-vendor(Location, Contact Person, Contact details etc.) भारत में बिक्री सेवा की स्थापना के बाद, विदेशी उप-विक्रेता के मामले में(स्थल , संपर्क व्यक्ति, संपर्क विवरण आदि)	<i>Applicable / Not applicable</i> लागू / लागू नहीं <i>Details attached at Annexure – F2.4</i> विवरण अनुलग्नक -2.4 पर संलग्न है ।
9.	Manufacturing process execution plan with flow chart indicating various stages of manufacturing from raw material to finished product including outsourced process, if any फ्लोचार्ट सहित विनिर्माण प्रक्रिया निष्पादन योजना , जिसमें आउटसोर्स प्रक्रिया, यदि कोई हो, सहित कच्चे माल से तैयार उत्पाद तक विनिर्माण के विभिन्न चरणों को दर्शाया गया हो,	<i>Details attached at Annexure – F2.5</i> विवरण अनुलग्नक - F2.5में संलग्न है ।
10.	Sources of Raw Material/Major Bought Out Item कच्चे माल के स्रोत / खरीदे हुए मुख्य मद	<i>Details attached at Annexure – F2.6</i> विवरण अनुलग्नक - F2.6में संलग्न है।
11.	Quality Control exercised during receipt of raw material/BOI, in-process , Final Testing, packing कच्चे माल / खरीदे हुए मद, प्रक्रियाबद्ध, अंतिम परीक्षण, पैकिंग करते समय गुणवत्ता नियंत्रण	<i>Details attached at Annexure – F2.7</i> विवरण अनुलग्नक - F2.7 पर संलग्न है
12.	Manufacturing facilities (List of machines, special process facilities, material handling etc.) विनिर्माण सुविधा(मशीनों की सूची , विशेष प्रक्रिया सुविधाएं, सामग्री रख-रखाव आदि)	<i>Details attached at Annexure – F2.8</i> विवरण अनुलग्नक - F2.8में संलग्न है ।
13.	Testing facilities (List of testing equipment) परीक्षण सुविधाएं(परीक्षण उपकरण की सूची)	<i>Details attached at Annexure – F2.9</i> विवरण अनुलग्नक – F2. 9 में संलग्न है ।
14.	If manufacturing process involves fabrication then- यदि निर्माण प्रक्रिया में फेब्रिकेशन की गई है तो- List of qualified Welders पात्र वेल्डर की सूची List of qualified NDT personnel with area of specialization विशेषज्ञता के क्षेत्र सहित पात्र एनडीटी कार्मिकों की सूची	<i>Applicable / Not applicable</i> लागू / लागू नहीं <i>Details attached at Annexure – F2.10</i> विवरण अनुलग्नक - F2.10में संलग्न है। <i>(if applicable)</i> लागू / लागू नहीं
15.	List of out-sourced manufacturing processes with Sub-Vendors' names & addresses सब-वेंडर द्वारा बाह्य स्रोतों (उनके नाम और पते सहित)से करवाएं गए निर्माण प्रक्रियाओं की सूची	<i>Applicable / Not applicable</i> लागू / लागू नहीं <i>Details attached at Annexure. –F2.11</i> विवरण अनुलग्नक - F2.10में संलग्न है।



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SUB-VENDOR QUESTIONNAIRE/ सब-वेंडर प्रश्नावली

		(if applicable) (यदि लागू हो)			
16.	Supply reference list including recent supplies नवीनतम आपूर्ति सहित आपूर्ति संदर्भ सूची		Details attached at Annexure – F2.12 विवरण अनुलग्नक - F2.12 में संलग्न है। (as per format given below) (नीचे दिए गए प्रारूप के अनुसार)		
Project/ package परियोजना /पैकेज	Customer Name ग्राहक का नाम	Supplied Item (Type/Rating/Model /Capacity/Size etc) आपूर्ति की गई वस्तु (प्रकार / रेटिंग / मॉडल / क्षमता / आकार आदि)	PO ref no/date पीओ संदर्भ सं. / तिथि	Supplied Quantity आपूर्ति की मात्रा	Date of Supply आपूर्ति की तारीख
17.	Product satisfactory performance feedback letter/certificates/End User Feedback उत्पाद के संतोषजनक प्रदर्शन संबंधी फीडबैक पत्र / प्रमाण पत्र / अंतिम उपयोगकर्ता फीडबैक		Attached at annexure - F2.13 अनुलग्नक F2. 3पर संलग्न है		
18.	Summary of Type Test Report (Type Test Details, Report No, Agency, Date of testing) for the proposed product (similar or higher rating) प्रस्तावित उत्पाद (एक समान या उच्च रेटिंग वाले) के लिए टाइप टेस्ट रिपोर्ट (टाइप टेस्ट विवरण, रिपोर्ट संख्या, एजेंसी, जांच की तारीख) का सारांश नोट:- रिपोर्ट प्रस्तुत करने की आवश्यकता नहीं है Note:- Reports need not to be submitted		Applicable / Not applicable लागू / लागू नहीं Details attached at Annexure – F2.14 विवरण अनुलग्नक - F2.1 4में संलग्न है (if applicable) (यदि लागू हो)		
19.	Statutory / mandatory certification for the proposed product प्रस्तावित उत्पाद के लिए वैधानिक / अनिवार्य प्रमाणीकरण		Applicable / Not applicable लागू / लागू नहीं Details attached at Annexure – F2.15 (if applicable) (यदि लागू हो)		
20.	Copy of ISO 9001 certificate आईएसओ 9001 प्रमाण पत्र की प्रति (if available(यदि उपलब्ध हो)		Attached at Annexure – F2.16 अनुलग्नक में संलग्न - F2.1 6 है		
21.	Product technical catalogues for proposed item (if available) प्रस्तावित मद के लिए उत्पाद तकनीकी कैटलॉग (यदि उपलब्ध हो)		Details attached at Annexure – F2.17 विवरण अनुलग्नक - F2.1 7 में संलग्न है		
Name: नाम:		Desig: पद:		Sign: हस्ता क्षर:	Date: तिथि:

Company's Seal/Stamp:- कंपनी की मुहर / मोहर:-



STANDARD QUALITY PLAN

Page 1 of 3

LEGENDS:

P-PERFORMED BY 1-BHEL REP.
W-WITNESS BY 2-VENDOR
V-VERIFIED BY 3-SUB-VENDOR

QPNO : QA/BE/QP/908 REV.NO. : 07 DESCRIPTION: (MATERIAL, CLASS, GRADE, RATING, SIZE ETC): PLATINUM RESISTANCE TEMPERATURE DETECTORS & ASSEMBLIES WITH THERMOWELL
SPECNO: As Per PO REV.NO. : --
DRG : As Per PO REV.NO. : --

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 -	

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STANDARD QUALITY PLAN

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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 confirmity	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 incluncluding 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 - -	

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STANDARD QUALITY PLAN

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1	2	3	4	5	6	7	8	9	10 11 12	13

NOTE:-

1. Records as marked * shall essentially be submitted by vendor as QA documentation package.
2. If applicable as per ordering specification, BHEL approved Drawing / BHEL Appd Data Sheet.
3. Type tests clearance from BHEL Engineering to be verified by inspection engineer during inspection at vendor's works.
4. Manufacturer to maintain calibrated instruments having better accuracy than the item under the test. Inspection engineer shall check the same.
5. 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.

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