

**NTPC LTD**  
**Vendor Development Cell (VDC), CPG-1 Raipur**

<b>A</b>	<b>MEG Details</b>		
	1.0	MEG No.	94MEG-06A
	2.0	MEG Description	Temperature Transmitters
	3.0	MEG Responsibility	VDC
<b>B</b>	<p><b>Technical Criteria of QR:</b></p> <p>1. a. The Applicant should be a Manufacturer of Temperature Transmitters.</p> <p style="text-align: center;"><b>OR</b></p> <p>b. Applicant should be Group Company or Subsidiary company of the Holding Company who is a Manufacturer of Temperature Transmitters.</p> <p>2. The Applicant should have successfully executed the supply of Temperature Transmitters during the last five (5) years as on the date of application.</p> <p>The Temperature Transmitters supplied should have been in operation for at least one (1) year prior to the date of application.</p>		
<b>C</b>	<p><b>Documents required in support of meeting QR:</b></p> <p>1. Latest annual report OR NSIC / SSI / MSME/UDHAYAM registration certificate / BIS license / ISO certificate / Certificate of registration from the concerned excise department / any other statutory document as a proof of being manufacturer of Temperature Transmitters in support of Clause 1. a. of Technical Criteria. Brief details of manufacturing facilities or Standard published catalogue for Temperature Transmitters also to be given.</p> <p>2. The PO in support of award and completion certificate/copies of invoice/client certificate to establish successful execution of the supply and operation of Temperature Transmitters as per QR.</p> <p>3. Applicant has to submit relevant documents in support of Clause 1. b. of Technical Criteria.</p>		

<p><b>D</b></p>	<p><b>Documents to be submitted to find executed value of orders:</b></p> <p>In addition to the documents required in support of meeting technical requirements as stated above, following documents are required to be submitted by the Applicants applying for enlistment: -</p> <ol style="list-style-type: none"> <li>1. Three (3) POs of the highest executed values of similar work (see definition at point E: Note- 1 below) during previous five (5) years from the date of application. Copy of Invoice / Completion certificate from the concerned buyer/s in support of successful execution of supply against the POs to be submitted. These will be required for calculation of execution capability.</li> <li>2. Audited balance sheet including Profit &amp; Loss statement for the previous three (3) completed financial year's reckoned from the date of application. In case where the audited results for the last financial years as on the date of application are not available, the financial result certified by a practicing Chartered accountant shall be considered acceptable.</li> <li>3. GSTIN certificate ,PAN ,Power of attorney, Letter of undertaking ,works information etc. as mentioned in enlistment application pages of website <a href="http://www.vendor.ntpc.co.in">www.vendor.ntpc.co.in</a></li> <li>4. NTPC can request for other documents as necessary during the course of evaluation.</li> </ol>	
<p><b>E</b></p>	<p>NOTE-1</p>	<p>Similar works means: Supply of Temperature Transmitters or Electronic Transmitters for Pressure, DP and DP based Flow / Level measurements.</p>
	<p>NOTE-2</p>	<p>The executed value means Basic value of quantity of similar works executed/supplied against the reference PO (also applicable to partly executed POs as on date of application). Where PO value is composite (i.e. including Taxes etc.), the applicant to give item-wise break-up of Composite PO value mentioning Basic Value, Taxes etc.</p>

## Technical Specifications

### 1. Single Input Temperature Transmitter

**Material Code: M9442035009 (TEMP.TRANSMTTR-I/P: UNIV, O/P:4-20MA, HART)**

**Instrument:** Single Input Temperature Transmitter  
**Type:** SMART, HART Compatible  
**Mounting:** DIN Rail Mount  
**Input Type:** Universal input (Single Input, RTD: PT-100 (2, 3 or 4 wire RTD) or Thermocouple: K type, S type or R type)  
**Input Selection:** Through HART communicator  
**Input Isolation:** Minimum 500 VAC or better  
**Power Supply:** 24 V DC +/- 10%  
**Electromagnetic compatibility:** as per EN 61326  
**Output:** 2-Wire (loop powered i.e. Power supply from input card of control system) 4-20 mA output with superimposed HART protocol signal  
**Measuring Range:** -200 to 800 Deg C for PT-100 or better  
-150 to 1350 Deg C for K Type or better  
0 to 1500 Deg C for S type or better  
0 to 1500 Deg C for R type or better  
**Cold Junction Compensation:** In-built PT100 OR PT1000  
**Cold junction Accuracy:** +/- 1 Deg C or better for Thermocouple  
**Accuracy:** RTD: =<0.25% of 0-250 Deg C span or better  
T/C-K type: =<0.2% of 0-600 Deg C span or better  
**Operation Conditions:** Ambient Temperature: -10 to 75 Deg C or better  
Humidity: 0 to 95% RH (non-condensing) or better  
**Burn Out output:** In case of failure of sensor output should go to extreme HIGH or LOW value (selectable by HART)  
**Update Time:** <= 1 sec or better  
**Protection Class:** IP20 or better  
**Shape:** Rectangular  
**Other Requirements:** - Vendor/supplier must supply minimum 5-point calibration report of temperature transmitter.  
- Reverse polarity protection.  
Fault signal on sensor break/short circuit

### 2. Dual Input Temperature Transmitter

**Material Code: M9442165304 (TEMP.TRANSMTTR:0-1500DEG C, UNIV(DUAL),4WR)**

**Instrument:** Dual Input Temperature Transmitter  
**Type:** SMART, HART Compatible  
**Mounting:** Field mounting with 2-inch pipe bracket  
**Input Type:** Universal input (Dual Input, both input RTD: PT-100 (2, 3 or 4 wire RTD) or both input Thermocouple: K type, S type or R type)  
**Input Selection:** Through HART communicator  
**Input Isolation:** Minimum 500 VAC or better  
**Power Supply:** 24 V DC +/- 10%  
**Electromagnetic compatibility:** as per EN 61326

**Output:** 2-Wire (loop powered i.e. Power supply from input card of control system) 4-20 mA output with superimposed HART protocol signal

**Measuring Range:** -200 to 800 Deg C for PT-100 or better  
-150 to 1350 Deg C for K Type or better  
0 to 1500 Deg C for S type or better  
0 to 1500 Deg C for R type or better

**Cold Junction Compensation:** In-built PT100 OR PT1000

**Cold junction Accuracy:** +/- 1 Deg C or better for Thermocouple

**Accuracy:** RTD: =<0.25% of 0-250 Deg C span or better  
T/C-K type: =<0.2% of 0-600 Deg C span or better

**Diagnostics & display:** Self-Indicating feature and digital display on transmitter

**Operation Conditions:** Ambient Temperature: -10 to 70 Deg C or better  
Humidity: 0 to 95% RH (non-condensing) or better

**Back-up function:** Bumpless changeover facility to Second Sensor in case of failure of first sensor

**Burn Out output:** In case of failure of sensor output should go to extreme HIGH or LOW value (selectable by HART)

**Update Time:** <= 1 sec or better

**Protection Class:** IP67 or better

**Other Requirements:**

- Vendor/supplier must supply minimum 5-point calibration report of temperature transmitter.
- Reverse polarity protection.
- Fault signal on sensor break/short circuit.
- 2-inch pipe bracket for mounting.

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