

Technical Specifications

1. SPECIFICATION FOR THERMOCOUPLE

Type : K Type Thermocouple

Quantity Required: 300 nos (consisting of 05 sets)

Mineral insulated k type thermocouple (ungrounded type)

Measuring range: 0-660 °C

Additional sample Testing at 900 °C

Immersion length of element below head: 400 mm.

Stem to be provided with adjustable M20 x 1.5 coupling with suitable Teflon ferrule inside

Accuracy : $\pm 3/8\%$ of reading (for 0-277 °C accuracy requirement is ± 1.1 °C and for 277 to 1260 °C the accuracy requirement is $\pm 3/8\%$ of reading.

TC stem to be provided with 6 mm OD SS-304 sheathing for protection.

Filling: MgO/Alumina

Measuring junction element should not be welded to protection tube.

Mineral insulation for measuring junction leads inside protection tube.

Thermocouple to be provided with porcelain connector and light weight metallic head.

Porcelain insulated terminal block.

General requirement:

1. Minimum 01 no. TC per set to be submitted before taking of full lot production, as calibrated by the bidder, shall be duly re tested/calibrated at BHEL Instruments Calibration Centre (BICC) Noida, which is a NABL accredited lab for final approval for production of the lot. In case of failure of any sample the second chance will be provided after which order will stand cancel automatically. It may be noted that approved samples will be retained by BHEL and the same will be adjusted against the final supplied quantity. However in case the sample fails to meet the acceptance criteria the same will be retained by BHEL.
2. All sensors shall be supplied with calibration certificates from a valid accredited lab such as NABL/UCAS/NIST OR National laboratory of any country for range (at 0, 300, 350, 400, 450, 500 , 550, 600, 660 °C). The lab should have Calibration Measurement Capability (CMC) suitable for this accuracy requirement.
3. The calibration certificate shall be issued on a format given by BHEL (Calibration has to be given in a format showing actual mV generated by the TC under testing v/s standard temperature at the point of calibration measured through a secondary device/fixed point temperature.
4. Testing of the TC during inspection to be demonstrated at 900 °C in line applicable test code.
5. TCs should be packed (8-10 no in each box) in Suitable rugged, shock proof and portable (hard top) carrying case.
6. Three sets of O & M manual (if applicable), Test Certificate, Guarantee Certificate, Certificates of newness and calibration certificates for each sensor have to be supplied by the party.
7. The supplier should stand guarantee for minimum one year for trouble free operation of all sensors at various sites.
8. Parties not meeting any of above requirement shall be outright rejected.
9. Inspection before dispatch at supplier's works. During this, calibration certificates shall be furnished

10. Only authorized dealer/distributor of original manufacturer need send their quotations supported by valid authorization letter from principle confirming acceptance to all technical/commercial terms of purchase contract.
11. Sample approval from purchaser before final full lot of manufacture.
12. Detailed catalogue/Drawings must be furnished with offer for technical scrutiny.
13. Serial no. of each TC to be punch marked at one place and also to be marked on a tag which will allocated by BHEL later on.

Technical Pre-Qualification criteria:

Capability of the bidder for having supplied past above item or equivalent is a pre requisite. For that either

- At least one PO copy in the name of the bidder along with proof of delivery and calibration certificate in last five years to be submitted by the bidder alternatively

OR

- Bidder has to submit 02 nos calibration certificate (Meeting the specification criteria) of the offered product manufactured by him from a NABL/UCAS/NIST OR National laboratory in the range as mentioned above along with non-returnable samples. **(03 NOS NON RETURNABLE SAMPLES SHALL BE SUBMITTED BY VENDOR PREFERABLY 01 WEEK BEFORE TECHNICAL BID OPENING)**