Procedure: CP-143F

Title: Calibration of Thermal Process Test Instruments

 Page:
 1
 of
 3

 Supersedes:
 11-Mar-2016

 Effective:
 23-JUN-2017

1.0 PURPOSE

- 1.1. This procedure establishes the requirements to adhere to when performing calibration of field test instruments.
- 1.2. Calibration shall be to the requirements of ISO 10012 or ANSI/INCSL Z 540-1. These requirements are considered to be met if calibration is done by a laboratory accredited to ISO/IEC 17025.

2.0 REFERENCE DOCUMENTS

2.1. PI-167 Control of Inspection, Measuring, and Test Equipment.

3.0 ALTEK 422 TEMPERATURE CALIBRATOR

- 3.1. ID Numbers: LOG 1524 EG, LOG 4146 EG.
- 3.2. Uses: Calibration of controlling, monitoring, or recording instruments and performance of SATs.
- 3.3. Calibration Frequency: 3 months max.
- 3.4. Calibration Standard: Primary or secondary standard traceable to NIST, or other equivelant National Standard.
- 3.5. Calibration Setpoints: 250°F, 400°F, 842°F, 1150°F, 1370°F, 1590°F, 1810°F, 2030°F and 2250°F (additional setpoints are permissible).
 - 3.5.1. Must be completed for each channel individually.
- 3.6. Accuracy Limits: +/- 1°F or +/- 0.1% of reading, whichever is greater.
- 3.7. Thermocouple (TC) Types to be Calibrated: K and R.
- 3.8. Reporting: Must meet AMS 2750 (current revision at the time of reporting).

4.0 AGILENT 34970A DATA LOGGER

- 4.1. ID Numbers: LOG 3993 VS, LOG 4348 VS.
- 4.2. Uses: Performance of TUS's
- 4.3. Calibration Frequency: 3 months max.
- 4.4. Calibration Standard: Primary or secondary standard traceable to NIST, or other equivelant National Standard.
- 4.5. Calibration Setpoints: 250°F, 400°F, 842°F, 1150°F, 1370°F, 1590°F, 1810°F, 2030°F and 2250°F (additional setpoints are permissible).
 - 4.5.1. Must be completed for each channel individually.

Date	6/23/2017	Date	6/23/2017	
Engineering	Keith Jones	Quality	Beau Easton	

This document and the information contained within is the property of Meyer Tool, Inc. Any reproduction, disclosure, or uses of the information within this document are prohibited except authorized in writing by Meyer Tool, Inc. The recipient accepts the responsibility for maintaining the confidentiality of the contents of this document.



- 4.6. Accuracy Limits: +/- 1°F or +/- 0.1% of reading, whichever is greater.
- 4.7. TC Types to be Calibrated: K
- 4.8. Reporting: Must meet AMS 2750 (current revision at the time of reporting).

5.0 TELEVAC MM200 / 7E1 COLD CATHODE / 2A TC TUBE, VACUUM INSTRUMENT/SENSORS

- 5.1. ID Number: 060224 (reference Meyer LOG 1520 PG).
- 5.2. Uses: Calibration of controlling, monitoring, or recording instruments.
- 5.3. Calibration Frequency: 12 months max.
- 5.4. Calibration Standard: Primary or secondary standard traceable to NIST, or other equivelant National Standard.
- 5.5. Calibration Setpoints: Any setpoints are acceptable so long as 20 microns (for TC tube) as well as 1x10-3, 5x10-4 and 5x10-5 torr (for cold cathode) are included.
 - 5.5.1. Must be completed for each channel individually.
- 5.6. Calibration Method: Shall be in accordance with manufacturer's recommendations.
- 5.7. Accuracy Limits: +/- 0.45 decade.

6.0 Transmation 1045 SN Pressure Calibrator

- 6.1. ID Numbers: LOG 1501 TH.
- 6.2. Uses: Calibration of controlling, monitoring, or recording instruments.
- 6.3. Calibration Frequency: 3 months max.
- 6.4. Calibration Standard: Primary or secondary standard traceable to NIST, or other equivelant National Standard.
- 6.5. Calibration Method: Shall be in accordance with manufacturer's recommendations.
- 6.6. Accuracy Limits: +/- 0.2 psi.

7.0 VAISALA DMT-152 DEWPOINT INSTRUMENT

- 7.1. ID Numbers: LOG 3689 TH, COX 3488 TH.
- 7.2. Uses: Calibration of controlling, monitoring, or recording instruments.
- 7.3. Calibration Frequency: 6 months max.
- 7.4. Calibration Standard: Primary or secondary standard traceable to NIST, or other equivelant National Standard.
- 7.5. Calibration Setpoints: Any setpoints are acceptable so long as a minimimum of three (3) setpoints are taken and the range from -60°F to -80°F is covered.
- 7.6. Calibration Method: Shall be in accordance with manufacturer's recommendations.
- 7.7. Accuracy Limits: Shall be in accordance with manufacturer's recommendations.

8.0 GE MMY245 DEWPOINT INSTRUMENT

- 8.1. ID Numbers: LOG 3689 TH, COX 3488 TH.
- 8.2. Uses: Calibration of controlling, monitoring, or recording instruments.



- 8.3. Calibration Frequency: 6 months max.
- 8.4. Calibration Standard: Primary or secondary standard traceable to NIST, or other equivelant National Standard.
- 8.5. Calibration Setpoints: Any setpoints are acceptable so long as a minimimum of three (3) setpoints are taken and the range from -60°F to -80°F is covered.
- 8.6. Calibration Method: Shall be in accordance with manufacturer's recommendations.
- 8.7. Accuracy Limits: Shall be in accordance with manufacturer's recommendations.

9.0 OUT OF TOLERANCE CONDITION

- 9.1. Any instrument which does not meet the requirements listed herein shall be taken out of service.
- 9.2. The calibration department shall refer to PI-167 for further action.



Revision History

Rev. Ltr.	Parg.	Description of Revision	Date Rev.	Rev. By
A	4.6	Changed an accuracy limit from +/-1% of reading to +/- 0.1%	8/14/13	O. Bagriy
В	7.5	Allowed any setpoints for Vaisala so long as - 60°F to -80°F is covered	3/20/15	K. Jones
С	3.5, 4.5, 5.5	Required each channel to be calibrated individually	6/25/15	K. Jones
С	3.5	Changed setpoints on Altek to go down to 750F, made others equally spaced	6/25/15	K. Jones
С	3.6	Changed accuracy limit from +/-1% of reading to +/- 0.1%	6/25/15	K. Jones
С	4.1	Corrected ID #	6/25/15	K. Jones
С	4.5	Changed setpoints on Agilent to go down to 750°F, made others equally spaced	6/25/15	K. Jones
С	5.0	Added 2A TC Tube	6/25/15	K. Jones
С	5.1	Referenced serial number on vacuum instruments/sensors	6/25/15	K. Jones
С	5.5	Required setpionts 20 microns, 1x10-3, 5x10-4, 5x10-5 torr	6/25/15	K. Jones
С	7.5	Required three (3) setpionts	6/25/15	K. Jones
D	3.5, 4.5	Changed setpoints to 250°F, 400°F, 842°F, 1150°F, 1370°F, 1590°F, 1810°F, 2030°F and 2250°F	7/20/2015	S. Lawless
D	5.7	Changed .5 decades to .45 decades.	7/20/2015	S. Lawless
Е	1.2	New section covering ISO requirements	3/11/16	K. Jones
F	8.0	New instrument added GE MMY245	6/23/17	K. Jones
F	All	General formatting throughout document	6/23/17	K. Jones