

ITEM 1747, ITEM 9

Report Number: 102267

Calibration Date: 11/18/2022

Submitted By: Illiana Instrumentation Service Schererville, IN 46375

SO Number: 1442410

PO Number: 4349

Type T Thermocouple

Tolerance: ASTM E230/E230M-17 Standard Tolerance

T28U-018-00-4

Item	Serial / Reference	Target (°F)	Actual (°F)	Reading (°F)	Reading (mV)	Correction (°F)	Tolerance (± °F)	U <sub>c</sub> (k = 2) (± °F)	TUR N:1	Acceptance (± °F)	Status (in/out)
1	EF9744	-103	-102.6	-99.4	-2.570	-3.2	2.0	0.54	4	1.9	out
		0	0.0	1.1	-0.654	-1.1	1.8	0.54	3	1.7	in
		70	70.0	70.0	0.836	0.0	1.8	0.54	3	1.7	in
2	EF9745	-103	-102.6	-99.4	-2.569	-3.2	2.0	0.54	4	1.9	out
		0	0.0	1.1	-0.653	-1.1	1.8	0.54	3	1.7	in
		70	70.0	70.0	0.836	0.0	1.8	0.54	3	1.7	in
3	EF9746	-103	-102.6	-99.4	-2.569	-3.2	2.0	0.54	4	1.9	out
		0	0.0	1.1	-0.653	-1.1	1.8	0.54	3	1.7	in
		70	70.0	70.0	0.836	0.0	1.8	0.54	3	1.7	in
4	EF9747	-103	-102.6	-99.2	-2.568	-3.4	2.0	0.54	4	1.9	out
		0	0.0	1.1	-0.653	-1.1	1.8	0.54	3	1.7	in
		70	70.0	70.0	0.837	0.0	1.8	0.54	3	1.7	in
5	EF9748	-103	-102.6	-99.2	-2.566	-3.4	2.0	0.54	4	1.9	out
		0	0.0	1.1	-0.653	-1.1	1.8	0.54	3	1.7	in
		70	70.0	70.0	0.835	0.0	1.8	0.54	3	1.7	in
6	EF9749	-103	-102.6	-99.2	-2.568	-3.4	2.0	0.54	4	1.9	out
		0	0.0	1.1	-0.654	-1.1	1.8	0.54	3	1.7	in
		70	70.0	70.2	0.836	-0.2	1.8	0.54	3	1.7	in
7	EF974A	-103	-102.6	-99.2	-2.567	-3.4	2.0	0.54	4	1.9	out
		0	0.0	1.1	-0.653	-1.1	1.8	0.54	3	1.7	in
		70	70.0	70.0	0.835	0.0	1.8	0.54	3	1.7	in
8	EF974B	-103	-102.6	-99.2	-2.568	-3.4	2.0	0.54	4	1.9	out
		0	0.0	1.1	-0.654	-1.1	1.8	0.54	3	1.7	in
		70	70.0	70.2	0.836	-0.2	1.8	0.54	3	1.7	in

Remarks: Thermocouples are supplied to meet the tolerance specified for temperatures above 0 °C (32 °F).

The correction must be added algebraically to the UUT reading to obtain the correct value.

**Equipment and Standards Used**

ID Number	Manufacturer	Model	Description	Calibration Due
03-1268	Hewlett Packard	3458A	8 1/2 Digit Digital Multimeter	08/19/2023
03-3729	Hart Scientific	5626	SSPRT Working Standard	01/21/2023
03-3850	Pyromation	Custom	RTD Working Standard	01/20/2023

Environmental Conditions at time of Calibration: Temperature: 23 °C [73 °F] Relative Humidity: 31%

Procedure Used: WI-525-36 Rev 4 which is based on ASTM E220-19

*[Signature]*  
 Metrology Technician

*[Signature]*  
 Authorized by

DUT Condition: Recalibration

The temperatures written in this report are those defined by the International Temperature Scale of 1990 (ITS-90).

The combined standard uncertainty includes the standard uncertainty reported for the standard, and the measurement process. The combined standard uncertainty is multiplied by a coverage factor of 2 to give an expanded uncertainty, which defines an interval having a level of confidence of approximately 95 percent. The expanded uncertainty presented in this report is consistent with the JCGM100:2008 Guide to the Expression of Uncertainty in Measurement. The expanded uncertainty is not to be confused with a tolerance limit for the user during application.

The DUT Acceptance tolerance is based on the DUT specification, the measurement uncertainty, the resulting test uncertainty ratio (TUR), and the maximum allowable probability of false accept risk (PFA, assumed to be 2%). In cases where the TUR ≥ 4:1, the acceptance tolerance = the DUT tolerance (guard bands are not necessary to achieve a PFA of 2%). In cases where the TUR < 4:1, the acceptance limits are reduced by guard bands calculated using method 6 of NCSLI Z540.3. Refer to NCSLI Z540.3 or Pyromation SD-525-15 for additional information.

For purposes of determining conformance with these specifications, an observed value or a calculated value shall be rounded in accordance with the rounding method of ASTM Practice E29-19

The standards of Pyromation Laboratory are traceable to the International System of Units (SI) through NIST or other National Metrology Institute, and are part of a comprehensive measurement assurance program for ensuring continued accuracy and measurement traceability within the level of uncertainty reported by this laboratory. The laboratory report number identified above is the unique report number to be used in referencing measurement traceability for the items identified in this report only.

This calibration is compliant to ISO/IEC 17025:2017. This calibration report applies only to the items described. It must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government. This report shall not be reproduced except in full without written approval of Pyromation, Inc.

# Report of Calibration



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PO Number: 4349

SO Number: 1442410

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T28U-018-00-4

Tolerance: ASTM E230/E230M-17 Standard Tolerance

Item	Serial / Reference	Target	Actual	Reading	Reading	Correction	Tolerance	U <sub>c</sub> (k = 2)	TUR	Acceptance	Status
9	EF974C	-103	-102.6	-99.4	-2.571	-3.2	2.0	0.54	4	1.9	out
		0	0.0	1.1	-0.655	-1.1	1.8	0.54	3	1.7	in
		70	70.0	70.0	0.835	0.0	1.8	0.54	3	1.7	in
10	EF974D	-103	-102.6	-99.4	-2.569	-3.2	2.0	0.54	4	1.9	out
		0	0.0	1.1	-0.654	-1.1	1.8	0.54	3	1.7	in
		70	70.0	70.0	0.835	0.0	1.8	0.54	3	1.7	in

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