

TECHNICAL MANUAL  
CALIBRATION PROCEDURE  
FOR  
DIGITAL THERMOMETER RTD

868

(OMEGA)



This publication replaces T.O. 33K5-4-286-1 dated 30 January 1994 and incorporates Interim Operational Supplement T.O. 33K5-4-286-1S-1 dated 9 May 1994.

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**DIGITAL THERMOMETER RTD****868****(OMEGA)****1 CALIBRATION DESCRIPTION:***Table 1.*

<b>Test Instrument (TI) Characteristics</b>	<b>Performance Specifications</b>	<b>Test Method</b>
Temperature	Range: 200 °F, 1100 °F  Accuracy: 200 °F range: -199.9 to -150.1 °F, $\pm 1.0$ °F -150.0 to 199.9 °F, $\pm 0.4$ °F 1100 °F range: -360 to 1100 °F, $\pm 2$ °F	Compared with Standard Resistance

**2 EQUIPMENT REQUIREMENTS:**

<b>Noun</b>	<b>Minimum Use Specifications</b>	<b>Calibration Equipment</b>	<b>Sub- Item</b>
2.1 RESISTANCE STANDARD	Range: 18.49 to 311.99 $\Omega$  Accuracy: $\pm 0.01\%$	ESI RS925	As available

**3 PRELIMINARY OPERATIONS:**

3.1 Review and become familiar with entire procedure before beginning calibration process.



Unless otherwise designated, and prior to beginning the Calibration Process, ensure that all test equipment voltage and/or current outputs are set to zero (0) or turned off, where applicable. Ensure that all equipment switches are set to the proper position before making connections or applying power.

3.2 Check the TI batteries and battery compartment for corrosion caused by battery leakage. Any corrosion must be removed and neutralized prior to beginning calibration. (Ref T.O. 33-1-27, para 1-6.c.(1) (c)).

3.3 Check the TI battery indicator, if the LO BAT appears on the DISPLAY replace the batteries.

**4 CALIBRATION PROCESS:**

**NOTE**

Unless otherwise specified, verify the results of each test and take corrective action whenever the test requirement is not met, before proceeding.

**4.1 TEMPERATURE CALIBRATION:**

4.1.1 Set the Resistance Standard to 100 Ω.

4.1.2 Connect the equipment as shown in Figure 1.

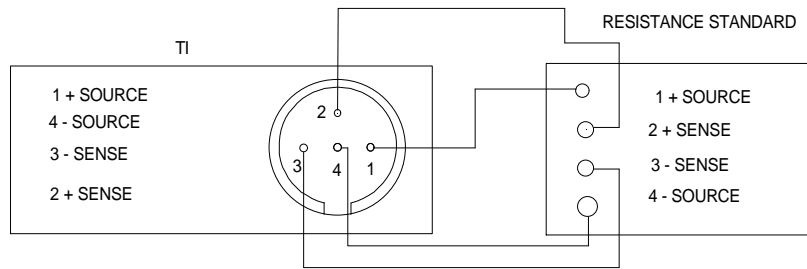


Figure 1.

4.1.3 Set the TI RANGE switch to 200.

4.1.4 Set the Resistance Standard to the first value listed in the Applied column of Table 2.

4.1.5 The TI DISPLAY must indicate within the corresponding values listed in the Limits column of Table 2.

Table 2.

Range (°F)	Applied (Ω)	Limits (°F)
200.0	49.23 (-196.6°F)	-195.6 to -197.6
	59.44 (-151.6°F)	-150.6 to -152.6
	59.84 (-149.8°F)	-148.4 to -150.2
	71.13 (-99.4°F)	-99.0 to -99.8
	92.95 (-0.4°F)	0.0 to -0.8
	100.0 (32.0°F)	31.6 to 32.4
	114.77 (100.4°F)	100.00 to 100.8
	125.54 (150.8°F)	150.4 to 151.2

Table 2. (Cont.)

<b>Range (°F)</b>	<b>Applied (<math>\Omega</math>)</b>	<b>Limits (°F)</b>
200.0	135.84 (199.4°F)	199.0 to 199.8
1100	18.49 (-328°F)	-330 to -326
	60.25 (-148°F)	-150 to -146
	100.0 (32°F)	30 to 34
	138.5 (212°F)	210 to 214
	175.84 (392°F)	390 to 394
	212.02 (572°F)	570 to 574
	247.04 (752°F)	750 to 754
	280.9 (932°F)	930 to 934
	310.7 (1095°F)	1093.8 to 1097.8

4.1.6 Repeat steps 4.1.4 and 4.1.5 for the remaining values listed in the Applied column of Table 2 changing the TI RANGE switch when necessary.

4.1.7 Disconnect and secure all equipment.

#### CALIBRATION PERFORMANCE TABLE

Not Required