

NIST TRACEABLE CALIBRATED THERMOMETERS FOR FIELD VERIFICATION CHECKS OF THERMOPROBES

FOR FAHRENHEIT THERMOPROBES

Catalog No.	Temp Range	Divs	Immersion
210-626-TP-C	+30 to 124 °F	0.1°	3 IN (76mm)
CALIBRATED @ 32, 70, 120F			
210-630-TP-C	+30 to 214 °F	0.2°	3 IN (76mm)
CALIBRATED @ 32, 110, 195 & 212F			

FOR CELSIUS THERMOPROBES

Catalog No.	Temp Range	Divs.	Immersion
210-610-TP-C	-1 to 101°C	0.1°	76mm
CALIBRATED @ 0, 43, 90, and 100°C			



Meets API Chapter 7 requirements

The American Petroleum Institute's (API) publication 'Manual of Petroleum Measurement Standards' (Chapter 7, Section 3) 'Static Temperature Determination Using Portable Electronic Thermometers' (First Edition, July 1985) offers specific recommendations for recalibration and verification of your electronic digital thermometer. The following section, in brown type, has been reprinted, with permission, courtesy of the American Petroleum Institute, as a customer service.

The newest version of Chapter 7, dated June 2001 has the same requirements.

To purchase this or other API standards, please contact the American Petroleum Institute's Publications Department at 202-682-8000

7.8.2 Initial Calibration

Before initial use, and at least once a year thereafter, each portable electronic thermometer shall be re-standardized in a laboratory or other qualified calibration facility. The thermometer shall be re-standardized by comparing it at three or more temperatures with either a National Bureau of Standards (NBS) (ICL note: NBS is now NIST) certified thermometer or an equivalent thermometer with accuracy traceable to the NBS in accordance with the manufacturer's instructions. These standardization checks will ensure that accuracy is maintained within the limits given in Table 3.

8.2.1 Field verification

Before each use, or once per day (whichever is less frequent), portable electronic thermometers should be spot checked by comparing the ambient reading against an ASTM glass stem thermometer in liquid. If the readings differ by more than 0.5 degree F (or 0.25 degree C), the portable electronic thermometer should be re-standardized before it is used for custody transfer.

8.2.2 MONTHLY VERIFICATION AND INSPECTION

On a monthly schedule, the portable electronic thermometer should be checked at two or more temperatures near the ends of its range against an NIST certified thermometer or an equivalent thermometer with accuracy traceable to the NIST. Make this check by placing the two thermometers side-by-side in a circulating bath and leaving them undisturbed for at least 10 minutes before making comparative readings. Alternately, the ice point and boiling point of fresh water may be used for accuracy check. The boiling point of fresh water must be corrected for altitude. If the thermometer readings differ by more than the tolerances listed in Table 1, the thermometer should be re-standardized (see 7.8.2)

In addition, the following physical checks should be made:

1. The junction between the cable and the probe should be checked for mechanical damage.
2. The cable insulation should be checked for cuts, breaks, or abrasion.

TABLE 3 - Portable Electronic Gauging Thermometers

Graduation	Range	Required accuracy
0.1 F	0-200°F	+/- 0.2°F
	> 200°F	+/- 0.5°F
0.1 C	0-100°C	+/- 0.1°C
	> 100°C	+/- 0.3°C

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