



ThermoProbe, Inc.

TP7 USER MAINTENANCE

RECOMMENDED OPERATION

To properly use this instrument the operator should be familiar with API 7 and the International Safety Guide For Oil Tankers and Terminals.

SPOOL-LOCK

To avoid unwanted dispatch or tangling of the cable, a threaded spool-lock is located on the case where the ground wire is attached. When using the instrument simply turn the screw out so that the cable spool can freely spin.

AUTO-SHUTOFF

The TP7 is equipped for automatic shut off after approximately 2 minutes. Battery life is extended since the unit cannot be left on unattended.

LOW BATTERY ALERT

LO - Battery Voltage Low

When the TP7 is switched on, it will immediately check the status of the battery. A low battery situation will result with a flashing of "LO" to the display for a few seconds before the temperature reading is available. The battery needs to be replaced soon after the warning is observed, this is especially important if the unit will be used in low light situations where the backlight will be illuminated.

BATTERY REPLACEMENT PROCEDURE

PERFORM BATTERY REPLACEMENT ONLY IN AN AREA KNOWN TO BE NONHAZARDOUS. APPROVED BATTERIES. See Identification plate for approved batteries.

Remove the three-faceplate screws; turn the unit upside down allowing the faceplate-circuit board module to fall into your hand. The battery is then readily accessible for manual replacement.

DISPLAY CHECK

When the instrument is first turned on, the display will briefly show all possible character segments. This will look like: 888.8. If any segments fail to show, the instrument should not be used and it is likely that the glass display is cracked.

ERROR CODES

Two error codes have been established to provide the user information in case a maintenance situation has occurred.

E1 - Short Circuit or Under Range

E2 - Open Circuit or Over Range

"E1" When this happens, one of two situations has exists. In most cases, the probe circuit has been shorted; usually meaning the cable has been smashed at some point. Secondly, "E1" represents a below range reading. The temperature being gauged is below the measurable specified range.

"E2" When this occurs, there are also two possible situations. The first and most likely is that the probe circuit has a discontinuity. This may occur as a result of a cut cable, bad termination at the circuit board or damaged sensor. Check the cable terminal making sure the wires are correctly inserted into the connector on the board. Secondly, "E2" represents an over range reading, meaning the temperature at the sensor has risen above the measurable specified limit of the unit.

°F/°C DISPLAY UNITS

The TP7 may display the temperature reading in Fahrenheit or Celsius units. To change the readout from one unit to the other remove the switch plate and slide the circuit board through the top. The selector is located above the battery and the letters F and C can be seen on the surface of the board. Place the selector shunt on the center and upper pin for °F and center and lower pin for °C. See illustration on next page. There is no need for recalibration if there is a change in the temperature units.

REPLACING THE PROBE ASSEMBLY

When attaching a new probe assembly to circuit, it is necessary to pay attention to the polarity of the probe.

Black Wire (shielding with shrink wrap) = (-)

White Wire (signal lead) = (+)

Polarity markings are located on the circuit board in front of the finger connector. See illustration.

Reversed wires will inhibit proper probe grounding and may cause false readings.

If a probe assembly is replaced with one of the same length, the calibration will be within + 0.2 °F at 32 °F and within +0.6 °F at 200 °F. It is recommended that a recalibration be performed to make the instrument as accurate as possible.

CALIBRATION

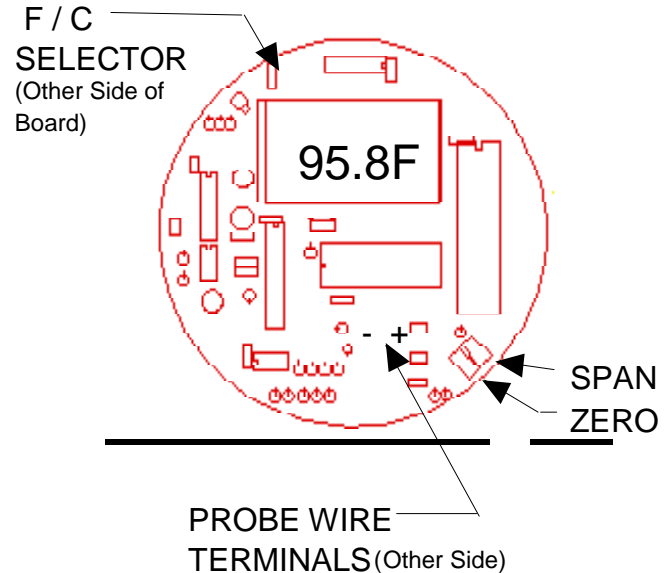
The TP7 design allows extended calibration periods. If accuracy is not within specifications check cable integrity and inspect the circuit board for possible corrosion, particularly near the cable terminals. Calibration adjustments will not properly correct these problems.

To verify/calibrate the instrument to the best possible accuracy over a wide range, the following items are necessary:

- A certified thermometer.
- A circulated refrigerated bath, with a temperature near:
32.0 °F/ 0.0 °C (Bath 1)
- A circulated hot bath with a temperature:
190-200 °F /88-93°C (Bath 2)
- Small flat head adjustment screwdriver or similar tool.

1. Remove the Calibration Access Plug as shown below.
2. Using the illustration (to the right) find the adjustment trims.
3. Adjust the ZERO with the probe assembly in Bath 1.
4. Adjust the SPAN with the probe assembly in Bath 2.
5. Repeat several times or until no adjustment is necessary.

FACEPLATE-CIRCUIT BOARD MODULE



AUTHORIZED REPAIR

It is recommend that service done beyond the scope of this article be presented to ThermoProbe Inc. or one of its distributors. Any servicing by unauthorized parties may void the Intrinsic Safety and the warranty.



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