ThermoProbe Inc.

TL1-R LABORATORY THERMOMETER

User Instructions

RECOMMENDED OPERATION:
The TL1-R is a higher precision version of our successful TL1-A. The TL1-R thermometer is intended to be used anywhere precision readings are required.

ARROWS:
The Arrows on the left side of the screen will show you at a glance as to whether the reading is increasing, decreasing or has stabilized. Intuitively the *Up Arrow* symbolizes an increasing temperature, *Down Arrow* a decreasing temperature and no arrows a stabilized status.

LOW BATTERY:
The instrument will display a warning "Lo BAtt" if the battery needs to be changed.

BATTERY REPLACEMENT PROCEDURE:
Remove the two screws on the back cover and remove the cover. Remove the coin cell battery. Note battery polarity before inserting a new battery into the holder. (+ Positive side faces top clip) Replace rear cover and reinstall the screws.

AUTO-OFF:
The unit will turn off automatically in 20 minutes if no buttons are pressed. *(Pressing "On/Off" button until 'Conn' is displayed will disable the Auto-Off feature.)*

CALIBRATION:
Calibration service is available from ThermoProbe and authorized distributors.

AUTHORIZED REPAIR:
It is recommended that service beyond the scope of this article be performed by ThermoProbe, Inc. or one of its authorized distributors.

ERROR CODES:
Two error codes have been established to provide the user information concerning the temperature sensor.

- *Err Lo - Short Circuit or Under Range*
- *Err Hi - Open Circuit or Over Range*

"Err Lo" - When this happens, one of two situations exists. In normal operation this represents a below range reading. The temperature being read is below the measurable specified range. If the sensor is not exposed to temperatures below the specified operating range it is possible that the sensor or the connection to the circuit board is short-circuited. Moisture on the circuit board may cause this condition.

"Err Hi" - Represents an over range reading, meaning the temperature at the sensor has risen above the measurable specified limit of the unit. Another possibility for this reading is a discontinuity in the sensor circuit. This may occur as a result of a broken sensor wire at the circuit board or damaged sensor.

On/Off button used to access the following operations:

- Single press turns instrument On or Off
- Press until "Conn" is displayed to disable Auto-Off feature

Function button used to access the following operations:

- Lowest Reading (min)
- Highest Reading (max)
- Average Reading
- °F <-> °C
- Change display resolution
- View zero correction

Operation	Function (f)	Annunciator
One quick push	Lowest Reading (min) Average Reading Highest Reading (max)	"L" "A" "H"
Hold and Release when display reads "C-F"	°F <-> °C	"C-F"
Hold and Release when display reads "dEC"	0.X <-> 0.XX	"dEC"
Hold and Release when display reads "ZERo"	Displays Zero Correction	"ZERo"

Note: The TL1-R will continuously update minimum, maximum and average data. Wait 20 seconds after power-on to allow collection of readings before viewing the minimum, maximum and average.

ZERO CORRECTION MODE:
Note: Corrections made will offset temperature over the entire range of the device.

1. Simultaneously press the function and on/off button. Release when 'AdJ' is displayed to enter zero correction mode.
2. While in zero correction mode, press and hold the power button to select 'UP', 'dn', 'SAVE', 'no SAVE' or 'CAnC'.
3. If 'UP' is selected, the temperature can be adjusted **up** by pressing the function button.
4. If 'dn' is selected, the temperature can be adjusted **down** by pressing the function button.
5. If 'CAnC' is selected, the instrument is still in zero correction mode and further adjustments can be made.
6. To save and exit after corrections has been made, hold the power button until 'SAVE' is displayed.
7. To exit without any zero correction changes, hold the power button until 'no SAVE' is displayed.
8. The instrument will return to normal operation.
9. To momentarily view the zero correction from the normal menu, hold the function button and release when 'ZERo' is displayed.

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