

9940N-TB

TECHNICAL BULLETIN

PANEL MOUNT THERMOMETER #9940N (Using Additional Features) 04/07/20

The model 9940N panel mount thermometer has additional capabilities built into its micro-processor beyond that of just a temperature indicator. These capabilities can be accessed via customer-supplied circuits connected to the pins on the unit's PC board as discussed below. The additional functions include temperature alarm at preset and adjustable levels, high or low temperature memory, hold, changing the unit to an update rate of every 10 seconds from every one second to extend battery life, and use of the unit as a count-down timer. The external circuits shown of "Figure 1" are purely for illustration and the customer must develop his own methods of using and controlling these functions.

The following discussion is intended to lead the user through the added capabilities of the model 9940N:

GETTING STARTED

Take the panel out of its back bracket and remove the four (4) screws from the back of the unit to expose the circuit board. The circuit board has twelve (12) connection pads across the top of the unit (these are the twelve (12) pin connection sites). They begin with "Pin 1" and increment from left to right if you are looking at them from the front of the unit.

"Pin 1" is the positive side of the battery (+1.5v). "Pin 12" is the negative side of the battery. Switches or jumper wires may be connected from different pins to enable the unit to perform the different functions as described below.

CHANGING UPDATE RATE

By connecting "Pin 10" to "Pin 4", you can change the update rate of the thermometer from one-second to ten seconds (this is usually done in applications where very long battery life is desirable).

HOLD FUNCTION

"Pin 9" can be connected via switching it to the "Pin 5" position, this will enable the "HOLD" function of the thermometer. The "HOLD" function will allow the unit to retain a specific temperature readout on the display LCD.

°F or °C

"Pin 11" is already connected via a switch on the back of the unit and changes the display from °F to °C, depending on switch position. No user changes are necessary for this function.

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SET-UP OF TEMPERATURE ALARM OR TIMER FUNCTIONS

To access these capabilities first make the following connections:

"Pins 5, 4 and 3" should be connected using two separate switches each to "Pin 2" and "Pin 1". "Pin 2" should be connected via a switch to "Pin 1". "Pin 8" is the alarm output and can be used to connect to an external alarm circuit as is implied in the attached "Figure 1" and discussed below.

By closing the switch between "Pin 2" and "Pin 1", you will reboot the thermometer and reset all parameters previously set to their default values.

By closing the switch between "Pin 5" and "Pin 1" you can toggle between temperature and timer mode.

TEMPERATURE MODE FUNCTIONS

While in the temperature mode, closing the switch between "Pin 4" and "Pin 2" will display the MAXIMUM temperature recorded and store in memory. By closing the switch between "Pin 3" and "Pin 2" the MINIMUM temperature recorded and stored in memory will be displayed.

You can display the HIGH-TEMPERATURE alarm setting by closing the switch between "Pin 5" and "Pin 2". Once you have the high-temperature setting on the LCD closing the switch between "Pin 4" and "Pin 2" will raise the alarm temperature setting and closing the switch between "Pin 3" and "Pin 2" will lower the alarm temperature setting.

The external ALARM circuit shown on the right side of "Figure 1" is only intended as a representation of an alarm circuit and is not included with the unit. It is the responsibility of the customer for this instrument to provide the circuitry necessary if he wants to use this functional capability.

TIMER FUNCTIONS

The device can also function as a count-down timer as follows:

As noted above, you can toggle between temperature and timer mode. In the timer mode, closing the switch between "Pin 4" and "Pin 2" will set the hours. Closing the switch between "Pin 3" and "Pin 2" will set the minutes of the timer. By closing the switch between "Pin 4" and "Pin 1" you can START and STOP the timer as it counts down.