

SENTRY-T-MATE

Temperature Monitor

The Sentry-T-Mate monitors temperatures in dewars or freezers used in cryogenic storage. The device provides an accurate reading in the temperature range of +50° C down to -196° C and gives the user immediate temperature information for vessels containing valuable specimens.

Setup:

The Sentry-T-Mate is delivered ready for operation. Simply plug the temperature sensor and the wall transformer into the Sentry-T-Mate and start monitoring temperature.

Operation:

The Sentry-T-Mate is delivered from Pacer Digital calibrated for accurate temperature measurement. Locate the temperature sensor at the location where you want to monitor temperature, plug the unit in and you are monitoring the temperature. In the table below is a list of possible conditions:

SE	Sensor Error – The temperature sensor is not plugged into the Sentry-T-Mate
Lo	The monitor believes that it is colder than –196°C. Re-calibration needed OR
	The sensor is immersed in a liquid that is colder than –196°C.
Hi	Occurs if the temperature is warmer than +50° C.

Calibration:

Each unit is calibrated before it is shipped from Pacer Digital Systems, Inc. It will be calibrated with or without a sensor extension depending on your order. The unit should never need another calibration unless a different sensor is used or a sensor extension is added or deleted from the circuit. The calibration process compensates for all cable and lead resistance in the circuit.

If you should want to calibrate the unit follow the steps below:

- 1) Remove the back cover from the monitor and note the little pushbutton on the circuit board.
- 2) Push the button on the back of the circuit board to initiate calibration. The readout will display -C
- 3) Dip the sensor into LN₂, wait for 2 minutes and while still in the LN₂, push the button. The readout will now display –0.
- 4) Pull the sensor out of LN₂ and wait approximately 3 minutes to allow it to warm up.
- 5) Dip the sensor in ice water, wait for 2 minutes and while still in the water, push the button.
- 6) Calibration is complete.

Please Note: The sensor must be dipped into LN₂ first for the calibration to be correct.

Temperature Sensor Placement:

The placement of the temperature sensor is important in determining the overall accuracy of the temperature readings. Ideally, the placement of the sensor should closely simulate the actual environment inside the dewar or freezer. Temperature readings can be biased if tape covers the sensor or if the sensor is placed in a tube with thermistors (often used in Liquid Level Control).

Pacer Digital Systems, Inc.
8658 Castle Park Drive
Indianapolis, IN 46256
Tel/Fax: 317-849-7887
www.pacerdigital.com