

# LNDS LIQUID NITROGEN DATA LOGGING SYSTEM



## Features

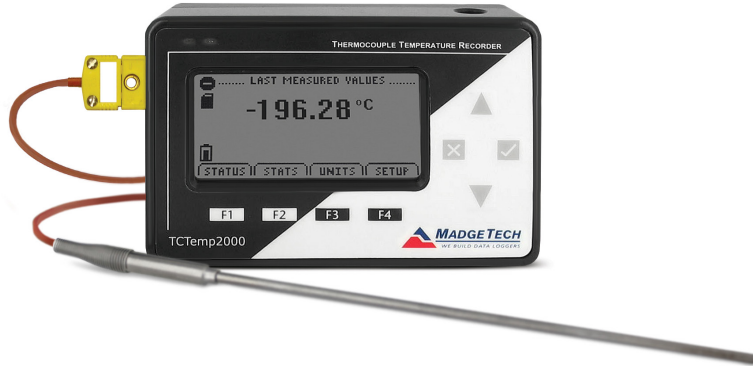
- Measures down to  $-200^{\circ}\text{C}$
- Equipped with one Internal temperature sensor and one type E thermocouple
- Large, backlit LCD display
- Min./max. & average statistics
- Front keypad w/lock feature
- User replaceable battery and external power
- Provides complete time vs. temperature history
- Thermocouple calibrated at  $-196^{\circ}\text{C}$ ,  $-80^{\circ}\text{C}$ , and  $0^{\circ}\text{C}$  for improved accuracy at lower temperatures

## Applications

- Liquid Nitrogen Monitoring
- $-200^{\circ}\text{C}$  applications

## Includes:

- TCTemp2000 Data Logger
- Type E Thermocouple (36" lead wire and 6" sheath)
- Calibration Certificate



MadgeTech's LNDS, Liquid Nitrogen Data Logging System, is an ultra-low temperature measurement system created specifically for the monitoring of temperature sensitive substances that need to be preserved at cryogenic temperatures.

The LNDS can be mounted to the top or outer of a cryo-shipper or freezer, and the probe sheath can be inserted into the tank. The user can then directly view the internal temperature through the LCD on the logger. Also, a variety of probe sizes are available.

MadgeTech's LNDS is easily user programmable with pre selected sample rates from between 2 seconds to 24 hours, and it features a programmable start time and date, up to six months in advance.

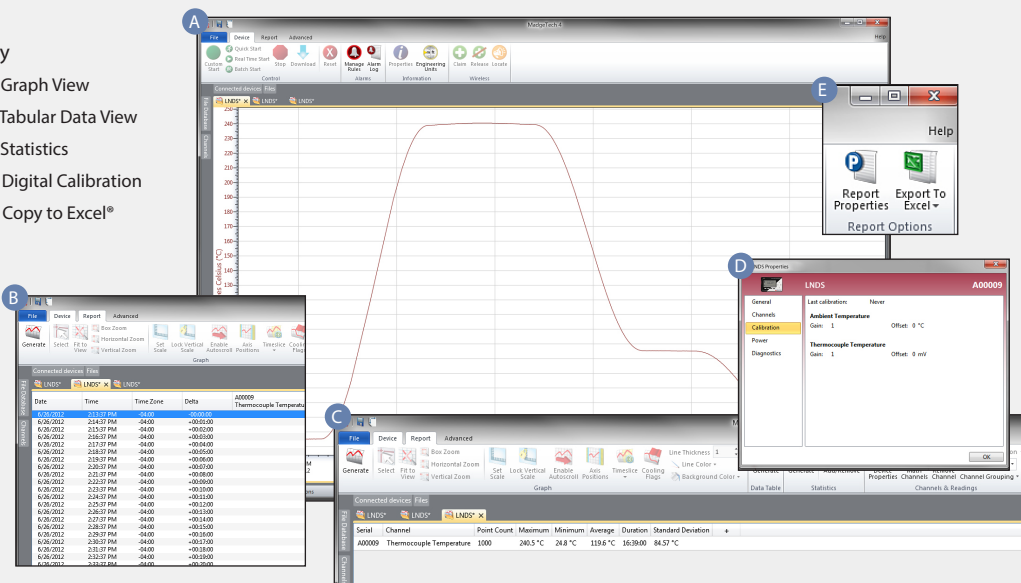
The 8-button membrane keypad and large LCD provides the user with the ability to view the current reading, minimum, maximum, and average statistics, in real-time. The non-volatile memory will retain data even if AC and battery power are lost. Also, the 9-volt battery it runs on is both user-replaceable and cost effective.

The Liquid Nitrogen Monitoring System includes the TCTemp2000 data logger with a calibration certification, thermocouple probe, and 9 volt AC wall mounted power adaptor.

## MADGETECH DATA LOGGER SOFTWARE

### Key

- A** Graph View
- B** Tabular Data View
- C** Statistics
- D** Digital Calibration
- E** Copy to Excel®



- Software Features:**
- Multiple graph overlay
  - Statistics
  - Digital calibration
  - Zoom in/ zoom out
  - Lethality equations (F0, PU)
  - Mean Kinetic Temperature
  - Full time zone support
  - Data annotation
  - Min./Max./Average lines
  - Data table view
  - Automatic report generation
  - Summary view
  - Multilingual

## TEMPERATURE

Sensor: Type E Thermocouple

Thermocouple Measurement Range: -20 °C to +260 °C

Thermocouple Resolution: 0.1 °C

Thermocouple Calibrated Accuracy: ±1.0 °C

Internal Channel Temperature Range: -20 °C to +60 °C

Internal Temperature Resolution: 0.1 °C

Internal Calibrated Accuracy: ±0.5 °C (0 to +50 °C)

Thermocouple connection: Female subminiature (SMP)

Cold Junction Compensation: Automatic, based on internal channel

## DOT-MATRIX LCD

Dimensions: 2.5" x 1.375" (63 mm x 35 mm)

Text: Configurable channel text size

Indicators: Power, status, memory

Backlight: Configurable w/auto shut-off and contrast adjustment

Start/Stop Time: Software programmable start time and date, up to six months in advance; programmable stop time

Memory: 131,071 readings per channel; 262,143 total readings; software configurable memory wrap

Reading Rate: 1 reading every 2 seconds to 1 every 24 hours

Calibration: Digital calibration through software

Calibration Date: Automatically recorded within device

Battery Type: 9V lithium battery included, user replaceable; optional AC adapter

Battery Life: 1 year battery life at 1 min reading rate with display off. 30 days typical with continuous LCD and no backlight usage

Data Format: Date and time stamped °C, °F, K, °R

Time Accuracy: ±1 minute/month (at 20 °C to 30 °C)

Computer Interface: PC serial or USB (interface cable required); 115,200 baud

Software: XP SP3/Vista/Windows 7/Windows 8

Operating Environment: -20 °C to +60 °C, 0 to 95%RH non-condensing

Dimensions: 4.8" x 3.3" x 1.25" (122 mm x 84 mm x 32 mm)

Thermocouple Dimensions: 36" lead wire, 6" x 3/16" dia. probe

Weight: 16 oz

Enclosure: Black anodized aluminum

**BATTERY WARNING:** MAY LEAK AND/OR FLAME IF OPENED, RECHARGED, CONNECTED IMPROPERLY, OR DISPOSED OF IN FIRE.

## ORDERING INFORMATION

MODEL	DESCRIPTION
LNDS	Liquid Nitrogen Data Logging System. Includes data logger with a calibration certification, thermocouple probe and 9 volt AC wall mounted power adapter.
IFC200	Software, manual, and USB interface cable (at least one IFC200 is required to communicate with multiple LNDS)
U9VL-J	Replacement battery for LNDS

ASK ABOUT  
OUR OTHER  
DATA  
LOGGERS

Temperature  
Humidity  
Pressure  
pH  
Level  
Shock  
LCD Display  
Pulse/Event/State  
Current  
Voltage  
Wireless  
Intrinsically Safe  
Spectral Vibration  
Motion

For Quantity Discounts call 603-456-2011 or email [sales@madgetech.com](mailto:sales@madgetech.com)