

# **LNDS**

# Liquid Nitrogen Data Logging System



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.

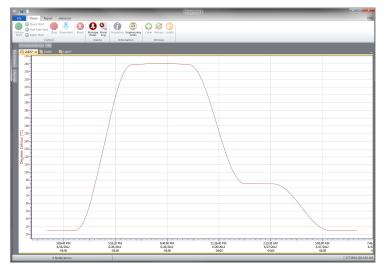
The LNDS can be mounted to the top or outside of a cryo-shipper or freezer, and the probe sheath can be inserted into the tank. The user can then directly view the internal temperature through the LCD on the logger. Also, a variety of probe sizes are available.

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 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 an ISO 17025 accredited calibration certificate, thermocouple probe, and 9 volt AC wall mounted power adapter.

### MadgeTech 4 Software Features



Graph View

• Mean Kinetic Temperature

• Full time zone support

Min./Max./Average lines

Data annotation

• Summary view

- Multiple graph overlay
- Statistics
- Digital calibration
- Zoom in/zoom out
- Lethality equations (F0, PU)

Statistics



Export to Excel



Tabular Data View



Automation

#### **Features**

- Measures down to -200 °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 °C, -80 °C, and 0 °C for improved accuracy at lower temperatures

### Applications

- · Liquid Nitrogen Monitoring
- -200 °C applications

#### Includes

- TCTemp2000 Data Logger
- Type E Thermocouple Probe (36 inch lead wire and 6 inch sheath)
- 9 Volt AC Wall Mounted Power Adapter
- ISO 17025 Accredited Calibration Certificate

#### **SPECIFICATIONS**

Specifications are subject to change without notice. Specific warranty remedy limitations apply. Call (603) 456-2011 or go to madgetech.com for details.

TEMPERATURE		
Temperature Sensor	Type E Thermocouple	
Thermocouple Measurement Range	-200 °C to +260 °C (-328 °F to +500 °F)	
Thermocouple Resolution	0.1 °C (0.18 °F)	
Thermocouple Calibrated Accuracy and Range	±1.0 °C (-200 °C to 0 °C)	
Internal Channel Temperature Range	-20 °C to +60 °C (-4 °F to +140 °F)	
Internal Temperature Resolution	0.01 °C (0.018 °F)	
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 in x 1.375 in (63 mm x 35 mm)	
Text	Configurable channel text size	
Indicators	Power, status, memory	
Backlight	Configurable w/auto shut-off and contrast adjustment	

GENERAL		
Start Modes	Software programmable start time and date, up to six months in advance	
Stop Modes	Programmable stop time	
Memory	131,071 readings per channel; 262,143 total readings	
Wrap Around	Yes	
Password Protection	An optional password may be programmed into the device to restrict access to configuration options.  Data may be read out with the password.	
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	9 V 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, °R, K	
Time Accuracy	1 minute/month at 25 °C (77 °F)	
Computer Interface	USB (interface cable required); 115,200 baud	
Operating System Compatibility	Windows XP SP3 or later	
Software Compatibility	Standard Software version 4.2.19.0 or later Secure Software version 4.2.18.0 or later	
Operating Environment	-20 °C to +60 °C 0 to 95%RH non-condensing	
Dimensions	4.8 in x 3.3 in x 1.25 in (122 mm x 84 mm x 32 mm)	
Thermocouple Dimensions	36 in lead wire, 6 in x 0.1875 in dia. probe	
Weight	16 oz	
Material	Black anodized aluminum	
Approvals	CE	

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

## Ordering Information

LNDS	PN 900349-00	Liquid Nitrogen Data Logging System. Includes data logger with a calibration certificate, thermocouple probe and 9 volt AC wall mounted power adapter.
IFC200	PN 900298-00	USB interface cable
U9VL-J	PN 901804-00	Replacement battery for LNDS

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

