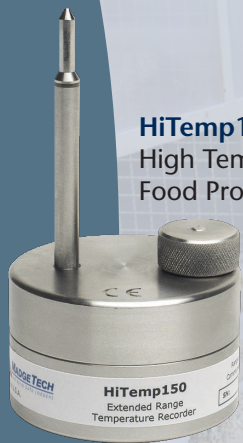# DATA LOGGING SOLUTIONS

*For regulatory compliance in*

## FOOD PROCESSES
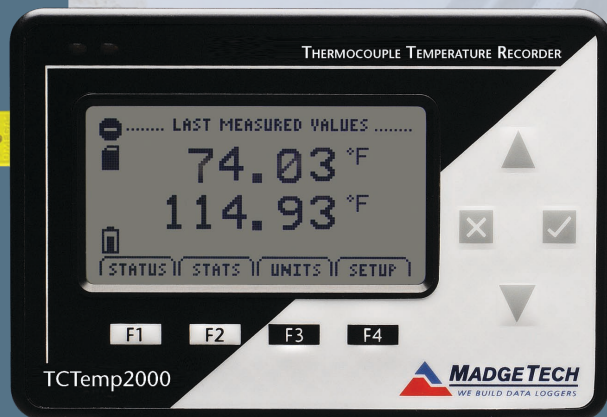
*In Accordance with*

- **USDA Regulations**
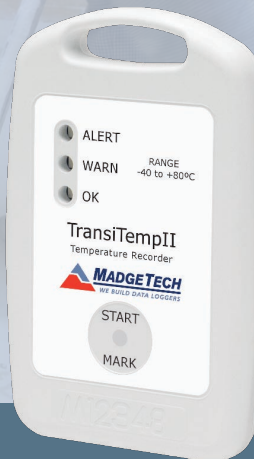- **HACCP Documentation**

**HiTemp150**
High Temperature
Food Processing Logger

**HiTemp150**
Extended Range
Temperature Recorder

**TCTemp2000**
Food Processing and Storage Logger

THERMOCOUPLE TEMPERATURE RECORDER

....... LAST MEASURED VALUES .......

74.03 °F

114.93 °F

| STATUS | STATS | UNITS | SETUP |

F1   F2   F3   F4

TCTemp2000

**MADGETECH**
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**TransiTempII**
Shipping and
Storage Logger

ALERT
WARN    RANGE -40 to +80ºC
OK

**TransiTempII**
Temperature Recorder

**MADGETECH**
WE BUILD DATA LOGGERS

START

MARK

**MADGETECH**
WE BUILD DATA LOGGERS

MadgeTech manufactures a variety of data loggers for monitoring and recording the cooking and cooling temperatures of food products. Each logger can be used through the entire cooking and cooling process to provide complete production information for analysis and record keeping. Cooling times are automatically calculated in the software.

## HiTemp150



*HiTemp150*

The **HiTemp150** is built for use in harsh environments, enabling the logger to measure and withstand temperatures up to 150$^{o}$C (302$^{o}$F). The HiTemp150 features a submersible stainless steel enclosure and a rugged 2" rigid probe. It is also available with a flexible 4" probe called the **HiTemp150-FP.** The larger probe and flexible cable allow for easy insertion into the product.

**NEW** MadgeTech's **HiTemp150-TSK** can be used to record temperatures up to 250$^{o}$C (482$^{o}$F) for 15 minutes and 200$^{o}$C (392$^{o}$F) for 21 minutes. The system includes a HiTemp150 data logger and a thermal shield. Designed for use in peanut processes such as oil roasting and dry blanching, the HiTemp150-TSK is versatile and can be used in many food production applications.



*HiTemp150-TSK*
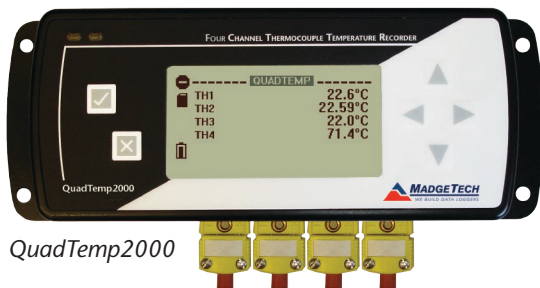


*QuadTemp2000*

## NEW QuadTemp2000

The **QuadTemp2000** is a four channel temperature data logger with an LCD screen. It simultaneously measures and records data from all four channels, making it ideal for monitoring multiple products. It features a push-button start, onscreen statistics, channel enabling/disabling and naming, real-time readings, open thermocouple detection and an optional wall mounted power supply.

## OT1000

The **OT1000** is a temperature logger with a 4" flexible piercing probe. This IP67 (splashproof) device is made of food grade Tecaform® and has a convenient mounting hook.

The OT1000 is also available in a wireless version, called the **RFOT**. The RFOT measures, records and transmits data back to a central computer for real-time monitoring. Visit *www.madgetech.com* for details.



*OT1000*

MADGETECH
WE BUILD DATA LOGGERS

Phone: (603) 456-2011  E-mail: info@madgetech.com  Website: www.madgetech.com

### Problem

Sausage needs to be cooked and cooled at precise temperatures for a certain amount of time. Improper cooking or cooling can compromise the quality and safety of the final product.

### Solution

MadgeTech's RFOT is a wireless meat cooking and cool down logger. It measures, records and wirelessly transmits data back to a computer for real-time monitoring.

### Method

- Activate the RFOT

- Insert the probe into the sausage

- Data will begin transmitting back to a computer

- Programmable cooking and cooling points will automatically be annotated and appear in the graph

## NEW QuadThermoVault

The **QuadThermoVault** is a 4-channel temperature logger that is Ideal for monitoring large ovens and can be used to monitor multiple points to create oven profiles. It's thermally insulated allowing it to withstand temperatures up to 350°C (662°F) for up to 25 minutes, and lower temperatures for longer periods of time.

## Specifications

| | HiTemp150 | HiTemp150-TSK | QuadTemp2000 | OT1000 | QuadThermoVault |
|---|---|---|---|---|---|
| **Range** | -40 to +150°C | -40 to +250°C* | Internal: -20 to +60°C Remote: -260 to +1820°C | -50 to +200°C (probe) | -20 to +350°C* |
| **Resolution** | 0.05°C | 0.05°C | 0.05°C | 0.01°C | 0.5°C |
| **Calibrated Accuracy** | ±0.5°C | ±0.5°C | ±0.5°C | ±0.1°C (-10 to +150 °C) Other range: ±0.5°C | ±0.5°C |
| **Probe** | 2" rigid | 2" rigid | Varies | 4" rigid | Varies |
| **Ingress Protection** | IP68 (Submersible) | IP68 (Submersible) | N/A | IP67 (Splash Proof) | N/A |
| **Material** | Food Grade Stainless Steel | Enclosure: PTFE Logger: Stainless Steel | Black Anodized Aluminum | Tecaform® | 304 stainless steel with PTFE insulation |

*Note: IFC200 Interface cable required.*
*\*For a specified amount of time.*

# Food Processes
# Storage Data Loggers

MadgeTech's storage data loggers monitor and record temperature or temperature and humidity, of food products during storage.

**Applications:**
- Refrigerators
- Freezers
- Storage Rooms

## Humidity and Temperature

The **RHTemp2000** is a humidity and temperature data logger. It has all the features of our standard temperature and humidity loggers, but it is enhanced with an LCD. This sophisticated device displays the current humidity and temperature readings and automatically calculates and displays minimum, maximum and average statistics. It can measure and record between -20 to +60°C ( -4 to +140°F) and 0 to 95%RH, making it is perfect for use in general food storage areas.
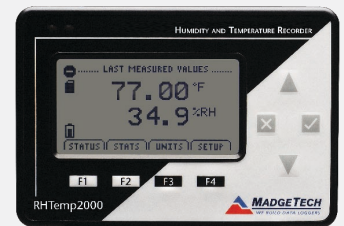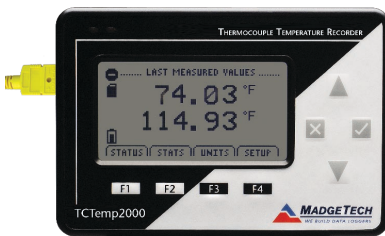
*RHTemp2000*

## Temperature

The **TCTemp2000** is a thermocouple based temperature logger. It has all the features of our standard thermocouple temperature loggers, but it is enhanced with an LCD. It accepts all thermocouples types which allows the device to measure and record temperatures between -260 to +1820°C (-436 to +3308°F). The convenient LCD provides instant viewing of the current ambient and thermocouple readings, as well as access to minimum, maximum, and average statistics. The TCTemp2000 is perfect for onscreen monitoring and data logging of refrigerators, freezers and general food storage areas.

*TCTemp2000*

## Wireless Temperature and Humidity

The **RFRHTemp101A** is a wireless humidity and temperature data logger. It measures, records and wirelessly transmits data back to a central computer for real-time monitoring. For additional security, data is also stored within the logger's internal memory and can be retrieved at a later date. The RFRHTemp101A can measure temperatures between -30 to +70°C (-22 to +158°F) and 0 to 95%RH.

*RFRHTemp101A*

## Application Note



### Problem

Cheese is a temperature and humidity sensitive product. It's important to store it in the proper environment to ensure that the quality of the product is maintained.

### Solution

MadgeTech's RHTemp2000 is a perfect solution to monitoring cheese storage areas. The device displays the current temperature and humidity readings as well as logs them to memory.

### Method

- Activate the RHTemp2000
- Place in the storage area
- Data can then be monitored on screen and download to a computer for analysis
- Minimum, maximum and average statistics can all be viewed onscreen as well



*RFTC4000A*

### Wireless Temperature

The **RFTC4000A** is a wireless thermocouple based temperature data logger. It measures, records, and wirelessly transmits data between -260 and +1820°C (-436 to +3308°F). The data is then received and displayed by a central computer. It is ideal for storage applications requiring real-time temperature monitoring.

## Specifications

|  | RHTemp2000 | RFRHTemp101A | TCTemp2000 | RFTC4000A |
|---|---|---|---|---|
| **Range** | -20 to 60°C<br>0 to 95%RH | -30 to +70°C<br>0 to 95%RH | Internal: -20 to +60°C<br>Remote: -260 to +1820°C | Internal: -30 to +70°C<br>Remote: -260 to +1820°C |
| **Resolution** | 0.1°C<br>0.1%RH | 0.1°C<br>0.5%RH | 0.1°C | 0.1°C |
| **Calibrated Accuracy** | ±0.5°C<br>±3.0%RH | ±0.5°C<br>±3.0%RH | ±0.5°C | ±0.5°C |
| **Operating Environment** | -20 to +60°C<br>0 to 95%RH non-condensing | -30 to +70°C<br>0 to 95%RH non-condensing | -20 to +60°C<br>0 to 95%RH non-condensing | -30 to +70°C<br>0 to 95%RH non-condensing |
| **Wireless** | No | Yes | No | Yes |
| **Materials** | Black Anodized Aluminum | ABS Plastic | Black Anodized Aluminum | ABS Plastic |

*Note: Interface cable required.*

# Food Processes
# Shipping Data Loggers

MadgeTech's shipping data loggers monitor and record temperature, or temperature and humidity of items during transit. They are all equipped with LED indicators to aid in maintaining product quality and assist in meeting compliance standards.

## Refrigerated Products
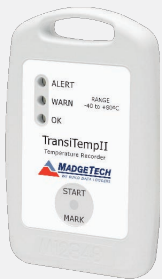


*TransiTempII*

The **TransiTempII** is a low cost, splashproof temperature data logger that is ideal for shipping applications between the range of -40°C to +80°C (-40 to +176°F). It is equipped with three LED's, green to signify that the logger is recording, orange indicates the user-set warning limits have been breached, and red indicates when the temperature alarm limits have been exceeded. The features of this device make it ideal for monitoring the temperature of refrigerated goods during shipping. The TransiTempII can also be use to monitor food storage areas.

The **TempRetriever** is a low cost temperature data logger. It features a push button start and an LED indicator to indicate if temperature limits have been exceeded. The TempRetriever has a user replaceable battery, with up to a 1 year battery life. It is ideal for monitoring and recording the temperature of dry shipments and can also be used in storage areas.
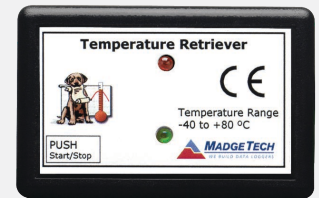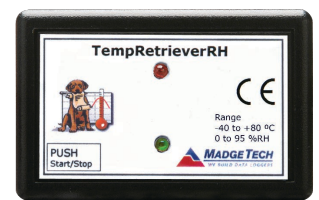


*TempRetriever*

## Temperature and Humidity Sensitive Products



*TransiTempII-RH*

The **TransiTempII-RH** measures and records temperature and humidity to validate that both parameters remained within a safe range during shipping. It is equipped with three LED's, green to signify that the logger is recording data, orange indicates the user-set warning limits have been breached and red indicates that the temperature alarm limits have been exceeded. The features of this device make it ideal for monitoring the temperature and humidity of sensitive products such as fruit, cheese and wine during shipping. This logger can also be used in food storage applications.

The **TempRetrieverRH** is a low cost humidity and temperature data logger. It features a push button start and an LED alarm to indicate if temperature limits have been exceeded. The TempRetrieverRH has a user replaceable battery, with up to a 1 year battery life. It is ideal for monitoring and recording the temperature and humidity of dry shipments and can also be used in storage areas.



*TempRetrieverRH*



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## Application Note



### Problem

Temperature monitoring is crucial in properly shipping fish. To maintain the highest quality for the maximum amount of time, fish should be shipped at proper temperatures. Exceeding this range could compromise the shipment.

### Solution

MadgeTech's TransiTempII is ideal for monitoring fish shipments. This splashproof device is equipped with LEDs to indicate when the device is logging, warning limits have been breached and when they have been exceeded.

### Method

- Connect the TransiTempII to a computer
- Set the indicator levels
- Place in the shipping crate
- Start device with magnetic wand
- Use LEDs to see if limits were breached or download data for analysis

## Specifications

|  | TransiTempII | TempRetriever | TransiTempII-RH | TempRetrieverRH |
|---|---|---|---|---|
| **Range** | -40 to +80°C | -40 to +80°C | -40 to +80°C<br>0 to 95%RH | -40 to +80°C<br>0 to 95%RH |
| **Resolution** | 0.1°C | 0.1°C | 0.1°C<br>0.1%RH | 0.1°C<br>0.1%RH |
| **Calibrated Accuracy** | ± 0.5°C<br>(-10 to +40°C)<br><br>± 1.0°C<br>(-20 to +70°C) | ±0.5°C | ±0.5°C<br>±5.0%RH | ±0.5°C<br>±3.0%RH |
| **User Replaceable Battery** | No | Yes | No | Yes |
| **Submersible** | Splash Proof | No | Splash Proof | No |
| **Materials** | ABS Plastic | ABS Plastic | ABS Plastic | ABS Plastic |

*Note: IFC200 interface cable required for the TempRetriever and TempRetrieverRH. IFC300 required for the TransiTempII and TransiTempII-RH.*
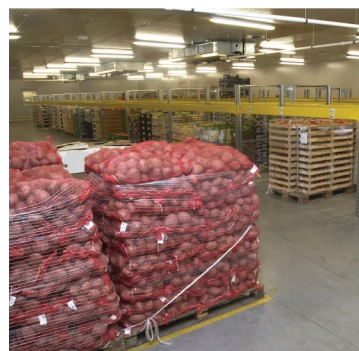
# MadgeTech Data Logger Software

This simple, easy-to-use, Windows-based software enables the user to effortlessly collect, display, and analyze data. A variety of powerful tools can be used to examine, export, and print professional looking reports with just a click of the mouse. This software can be downloaded for free from the MadgeTech web site.

## Software Features

- Multiple graph overlay
- Statistics calculations
- Digital calibration
- Zoom in/ zoom out
- Cooling flags
- Automatic cooling time calculation
- Average line
- Lethality equations
- Full time zone support
- Data annotation
- Min./max. line
- Data table view
- MKT
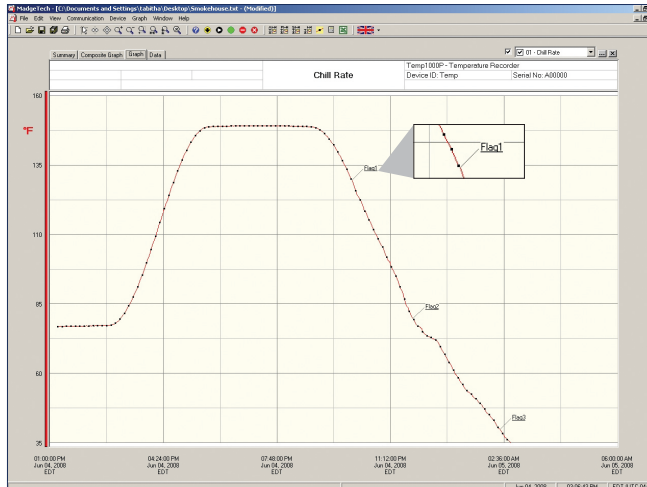


For easy verification, cooling flags can be set to automatically flag within the data.



Up to 5 cooling flags can be set, simply type in the temperatures within the *Set Cooling Flags* window.



For customers validating pasteurization the software automatically calculates the kill factor for Pasteurization (PU). The software also automatically calculates F0 values.



Data can be viewed in tabular, graph or summary formats. For additional analysis it can be exported to Excel®.



The cool-down rate is automatically calculated within the software.