Data Logging Solutions for USDA Regulation Compliance and HACCP Programs for

Food Processing

MADGETECH

WE BUILD DATA LOGGERS
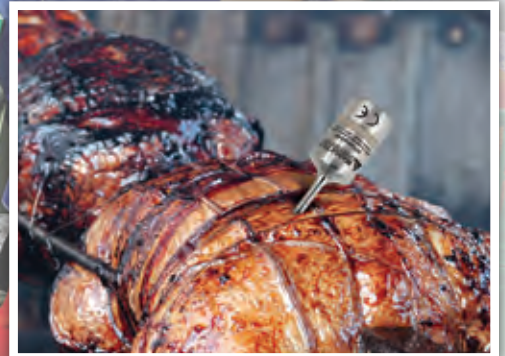
Simplifying How the World Measures & Records Data

MadgeTech, Inc. is a global company, based in New England and founded on old-fashioned principles, customer service, quality, and trust. MadgeTech's President, Norman Carlson, started the company in 1996 and charted the growth of the product lines and services while maintaining those solid core principles.

Our 'Can Do' team of engineers and technical staff consistently incorporate new and innovative ideas into our data loggers. In short, we push the envelope, raising the bar in innovation and quality. Our competitors have praised us by adopting many of our ideas as their own. Over time, MadgeTech has become the industry standard in the data logger market. MadgeTech continuously develops new, cutting-edge products, creating solutions for our customers around the world in industries across the board. Our growing network of distributors has expanded our presence to markets far beyond our home-headquarters in New Hampshire, our products are now sold in over 100 countries around the world.

Our employees are committed to quality and customer satisfaction. Behind the full range of MadgeTech's products and services is the cumulative expertise of experienced engineers, manufacturing and electronic professionals and technicians. Our knowledgeable sales team can offer technical advice to assist in selecting the right product for each application, as well as providing after-sales support.

MadgeTech is dedicated to providing customers with reliable, affordable products, hassle-free ordering, and excellent service, saving customers time and money. It is our goal to earn your trust in meeting your needs and providing innovative solutions. The products and services that bear the MadgeTech name come with quality assurance and the best support in the industry today.

Norman E. Carlson,

Founder & President

Data Logging Solutions for Temperature Critical Applications in Food Processing

Wireless Continuous Process Monitoring
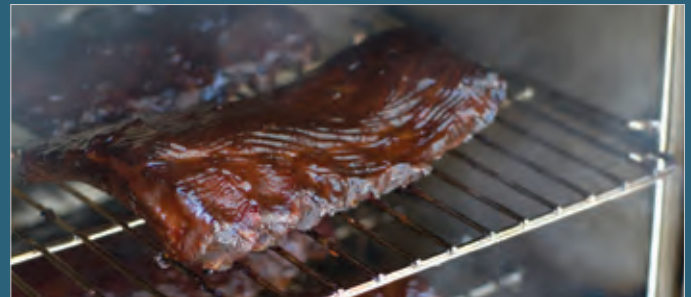

Cooking & Cooling

Food Storage

Food Shipping

Beverage Pasteurization

Oven Temperature Profiling

Egg Shipping & Storage and Incubation

Canning Processes

Wireless Continuous Process Monitoring
Cooking, Cooling and Storage Data Loggers

MadgeTech's wireless, continuous monitoring data logging system provides a streamlined solution for measuring and recording the cooking, cooling and storage of meat and food products. Wireless data loggers are placed throughout a facility to measure processes such as cooking and cooling cycles or environmental monitoring in coolers, freezers or warehouses. The RFC1000 transceivers are placed throughout the site and communicate with the wireless data loggers. Full communication is performed wirelessly and real-time data is sent back to a central PC. If the data received is out of a safe range, the system can be configured to send an email, text message or on-screen alarm. Data can be transmitted up to 2000 ft maximum outdoors (line of sight, unobstructed) and 500 ft maximum indoors. To transmit over longer distances, additional RFC1000s are added.

Wireless Meat Temperature Monitoring
RFOT

The **RFOT** is designed for use in monitoring and recording the temperature of meat products during cooking, cooling and storage. It can be used in smokers and other cooking processes up to 212 °F (100 °C) as well as coolers and freezers down to -4 °F (-20 °C). It is completely splash proof and can withstand wash down cycles.

Once the loggers are deployed, they can be stopped and started, and data can be downloaded, from a central PC.

New! Rugged T-Handle
Tested to withstand thousands of cycles.

Ambient Wireless Data Loggers

Temperature, Humidity and Carbon Dioxide

MadgeTech has designed the 2000A Wireless Series for customers that need to monitor temperature, humidity or carbon dioxide of warehouses, coolers, freezers, etc. This series includes a digital display to see the current reading, as well as minimum, maximum and average statistics based on the data recorded to memory. Data is also sent wirelessly back to a central PC through the RFC1000 wireless network.

This series also includes an audible alarm to alert users in close proximity. If the temperature or humidity exceeds the safe range, the audible alarm enables the user to take immediate action. Email, text message or on-screen alerts can also be configured.

The **RFRHTemp2000A** is a wireless temperature and humidity data logger. It is ideal for monitoring warehouses and other temperature and humidity sensitive environments. The **RFCO₂RHTemp2000A** is a wireless CO_2, temperature and humidity data logger, and is ideal for a varienty of food and beverage applications.

Applications

- Coolers
- Freezers
- Warehouses
- Thermal Mapping

Features

- LCD Screen
- Audible and LED Alarm Indicators
- Battery Life Indicator

RFRHTemp2000A
Wireless Temperature and Humidity Data Logger with LCD display on table mount.

RFCO₂RHTemp2000A ▶
Wireless CO₂, Humidity and Temperature Data Logger with LCD on wall mount.

Therm-A-lert Series

The Therm-A-lert Series is designed for wireless environmental monitoring throughout a facility. The **Therm-A-lert-P** is designed to measure temperatures within coolers and freezers. The built in external RTD probe comes with a rigid 4.0 in (102 mm) probe sheath with 9 ft of lead wire to thread into the cooler or freezer, while the body of the data logger can remain at ambient conditions.

The **Therm-A-lert** and **Therm-A-lert-RH** measure ambient temperature and humidity, respectively. They are ideal for monitoring warehouses and other temperature and humidity sensitive environments.

Therm-A-lert-P
Wireless Temperature Data Logger with External RTD Probe

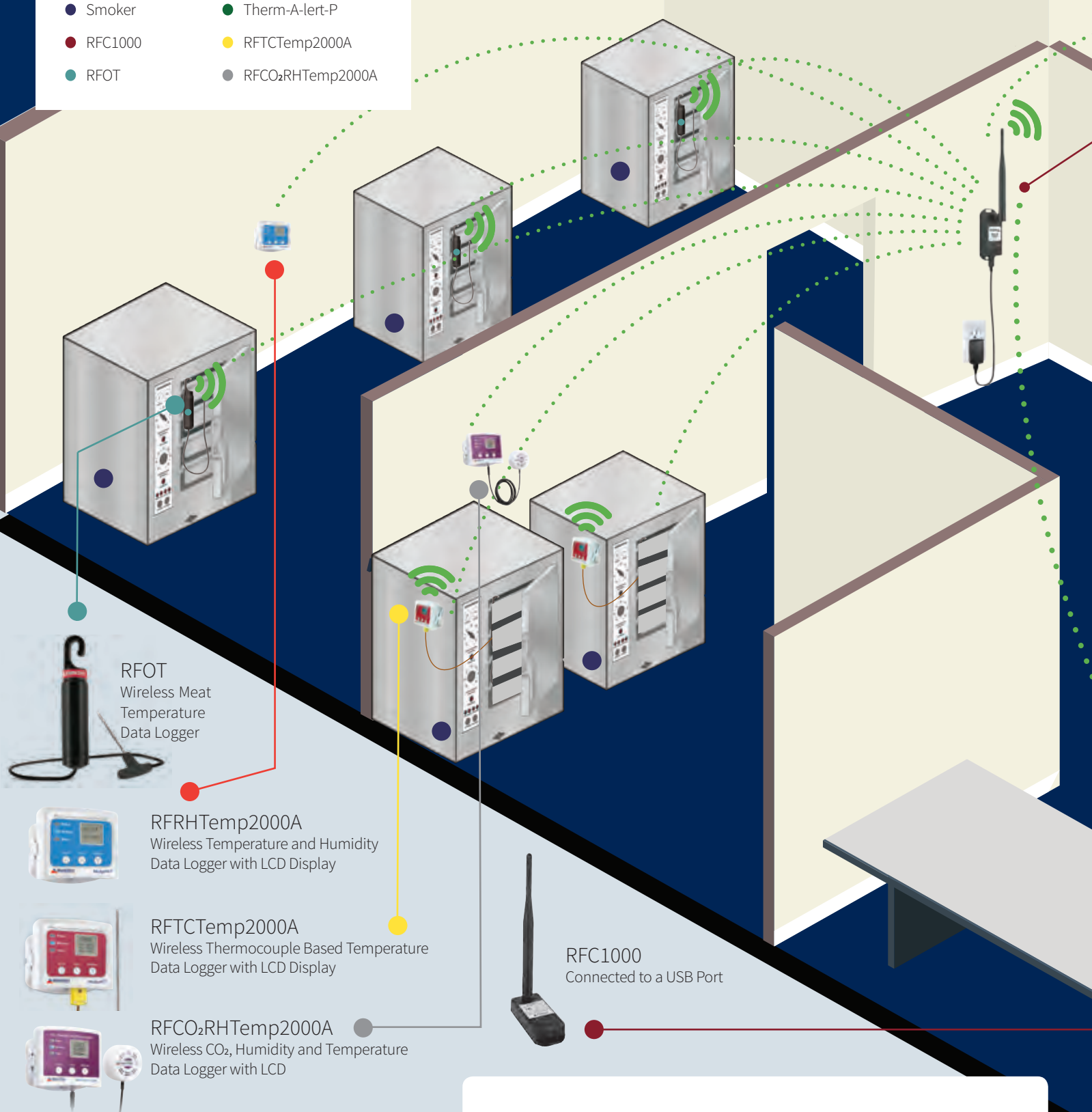### ◄ Therm-A-lert-RH
Wireless Humidity and Temperature Data Logger

Therm-A-lert ▶
Wireless Temperature Data Logger

Benefits

- Greater Internal Memory Storage
- Great Value

Legend

- Cooler/Freezer
- Smoker
- RFC1000
- RFOT
- RFRHTemp2000A
- Therm-A-lert-P
- RFTCTemp2000A
- RFCO₂RHTemp2000A

RFOT
Wireless Meat Temperature Data Logger

RFRHTemp2000A
Wireless Temperature and Humidity Data Logger with LCD Display

RFTCTemp2000A
Wireless Thermocouple Based Temperature Data Logger with LCD Display

RFCO₂RHTemp2000A
Wireless CO₂, Humidity and Temperature Data Logger with LCD

RFC1000
Connected to a USB Port

WIRELESS DIAGRAM
for the RFOT, 2000A Series and Therm-A-lert Series Data Loggers

It's Easy! Start Logging in 3 Steps...

1. Deploy the Data Loggers
2. Wirelessly Start the Data Loggers
3. Data is instantly transmitted to a computer for real-time monitoring. If user selectable alarm ranges have been exceeded, an email, text message or on-screen alarm will be received.
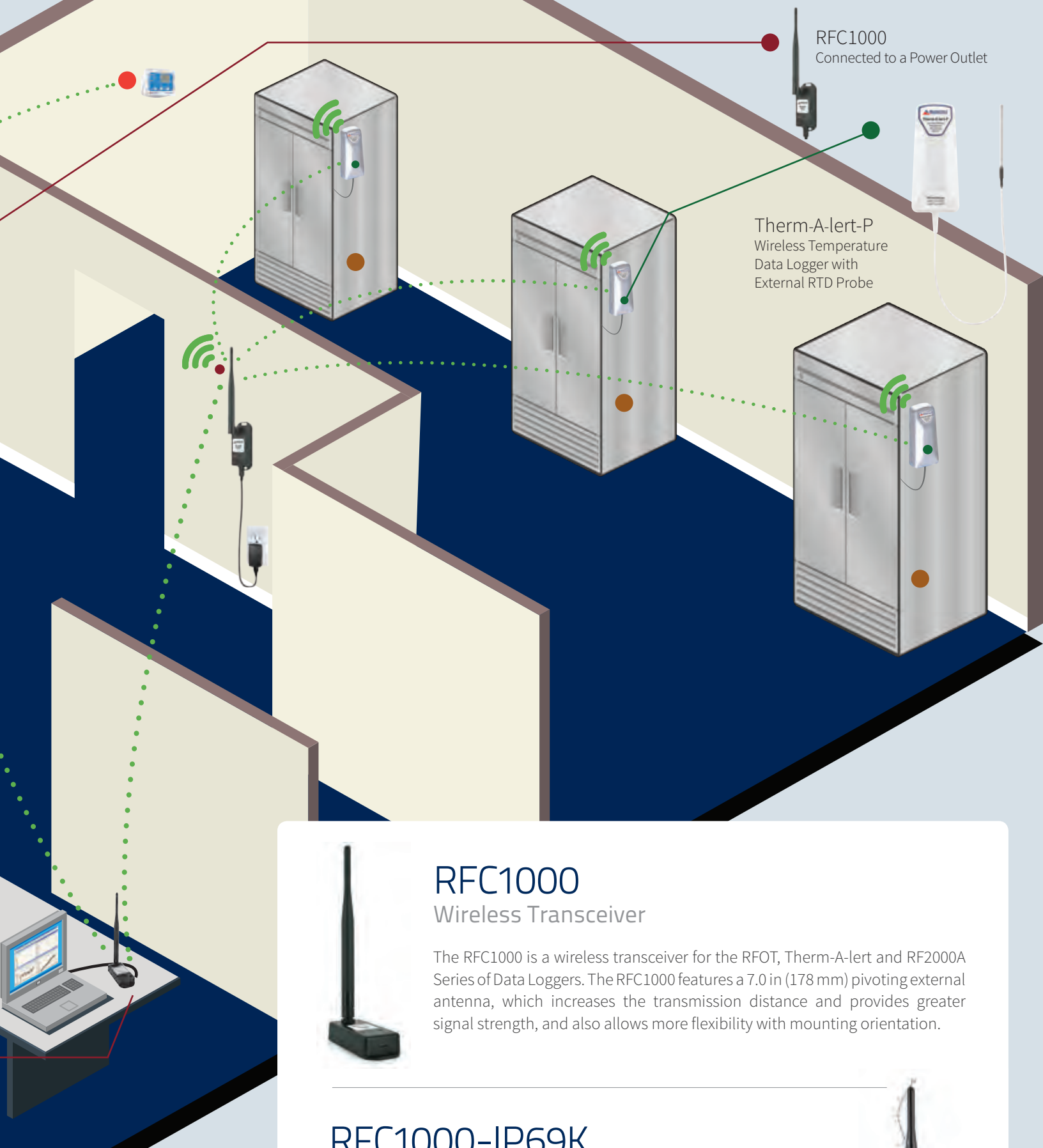
Therm-A-lert-P
Wireless Temperature
Data Logger with
External RTD Probe

RFC1000
Wireless Transceiver

The RFC1000 is a wireless transceiver for the RFOT, Therm-A-lert and RF2000A Series of Data Loggers. The RFC1000 features a 7.0 in (178 mm) pivoting external antenna, which increases the transmission distance and provides greater signal strength, and also allows more flexibility with mounting orientation.

RFC1000-IP69K
Splash Proof Wireless Transceiver

For environments that require high pressure, high temperature wash down, MadgeTech has designed the RFC1000-IP69K. This new splash proof transceiver can be installed directly in the wash down location, ensuring 100% communication throughout the entire process.

Standalone Data Loggers
Cooking and Cooling Data Loggers

High Temperature Wet or Dry Processing Applications
### HiTemp140 Series

The MadgeTech **HiTemp140** and **HiTemp140-PT** series data loggers are designed to be used in a wide range of food and meat processing applications to help comply with HACCP requirements and USDA regulations. These data loggers can indefinitely withstand temperatures of up to 284 °F (140 °C) and are completely submersible. The RTD probe and food-grade stainless steel enclosure, is available with both rigid and flexible probe models. This series allows customers to create a custom validation kit for smokehouse monitoring, oven mapping, pasteurization and more.

The **HiTemp140X2** series of dual probe high temperature data loggers offer extreme flexibility for high temperature monitoring applications. This product is ideal for applications such as oven mapping, surface temperature monitoring, food processing applications and much more.

A variety of flexible and ambient probe combinations are available.

New! Dual Probe Style

HiTemp140X2   HiTemp140-1   HiTemp140-2   HiTemp140-5.25   HiTemp140-7   HiTemp140-PT-1
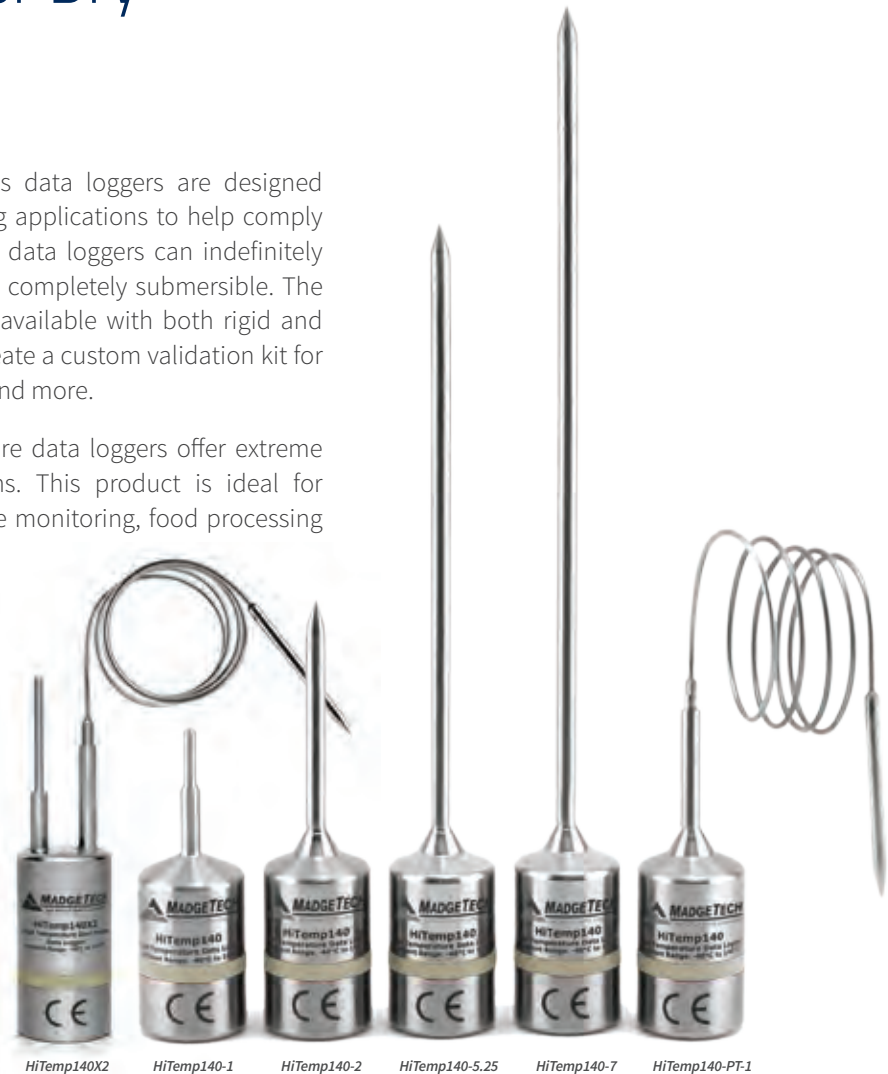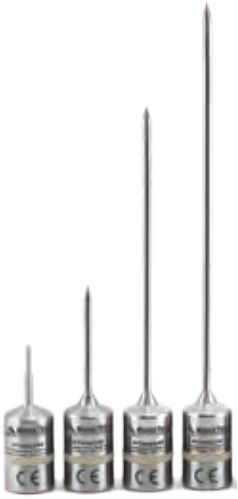
The **HiTemp140** features a needle point rigid RTD probe for easy insertion into a product. Various probe lengths and diameters are available for different types of products.

Product Name	Applications
HiTemp140-2	Canning
HiTemp140-2-TD	Canning
HiTemp140-5.25	Canning, Internal Temperature Product Monitoring: Sausage
HiTemp140-5.25-TD	Canning, Internal Temperature Product Monitoring: Sausage
HiTemp140-7	Internal Temperature Product Monitoring: Hams, Briskets and other Large Meat Products

The **HiTemp140-PT** features a 24.0 in (610 mm) stainless steel bendable wire with rigid probe sheath that is available in a 1.0 in (25 mm) or 5.0 in (127 mm) length.

| Product Name	Applications
HiTemp140-PT-1	Internal Temperature Product Monitoring: Bacon, Small Sausage Links, Jerky, Patties, Nuggets
HiTemp140-PT-5	Internal Temperature Product Monitoring: Bacon, Small Sausage Links, Jerky, Patties, Nuggets

The **HiTemp140X2** series features a dual probe design comprised of a combination of two remote temperature probes (PT and FP) or one ambient (TD) and one remote temperature probe.

Product Name	Applications
HiTemp140X2-TD-PT	Internal Product Temperature Monitoring **and** Ambient Temperature within a Process
HiTemp140X2-FP-PT	Internal Temperature Product Monitoring in Two Seperate Areas

IFC406
Multiplexer Data Logger Interface

The IFC406 Multiplexer Data Logger Interface allows for multiple devices to be connected into one interface. Each IFC406 allows for 6 data loggers to be connected. Up to 3 IFC406 units may be daisy-chained together to communicate with a total of 18 devices through 1 USB port.
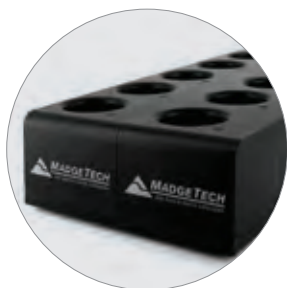
To connect multiple IFC406 Interfaces together, simply join the units side by side, making sure the spring pin contacts are connected and magnetically joined.

Cooking and Cooling Data Loggers

Extended Temperature Monitoring
Thermal Shield

For applications above 284 °F (140 °C), a thermal shield is available for the HiTemp140 and HiTemp140-PT series data loggers. Made of food-grade PTFE, the Thermal Shield extends the operating temperature range of the data logger for extreme temperature monitoring.

Time vs Temperature Chart

Ambient Temperature	Exposure Time in Air	Exposure Time in Liquid
-328 °F (-200 °C)	18 minutes	n/a
-292 °F (-180 °C)	19 minutes	n/a
-256 °F (-160 °C)	21 minutes	n/a
-220 °F (-140 °C)	24 minutes	n/a
-184 °F (-120 °C)	27 minutes	n/a
-148 °F (-100 °C)	32 minutes	n/a
-112 °F (-80 °C)	40 minutes	n/a
-76 °F (-60 °C)	55 minutes	25 minutes
-40 °F (-40 °C)	70 minutes	32 minutes
-4 °F to +284 ºF (-20 °C to +140 ºC)	Indefinitely	Indefinitely
302 °F (150 °C)	88 minutes	40 minutes
320 °F (160 °C)	75 minutes	34 minutes
338 °F (170 °C)	63 minutes	29 minutes
356 °F (180 °C)	55 minutes	26 minutes
374 °F (190 °C)	50 minutes	23 minutes
392 °F (200 °C)	45 minutes	21 minutes
410 °F (210 °C)	42 minutes	19 minutes
428 °F (220 °C)	39 minutes	18 minutes
446 °F (230 °C)	36 minutes	17 minutes
464 °F (240 °C)	34 minutes	16 minutes
482 °F (250 °C)	32 minutes	15 minutes

HiTemp140 series shown in Thermal Shields. Vented model and flush-top shown.

Vented Model
Probe Protection

Flush-Top Model
Allows for Probe Piercing

HiTemp140 Series Applications

- HACCP Programs
- Compliance with USDA Regulations
- Food and Meat Process Monitoring
- Oven Monitoring and Mapping
- Cooling and Storage Monitoring
- Pasteurization
- Conveyor Cooking and Cooling Cycles

4 Channel Oven Temperature Profiler
QuadThermoVault

The QuadThermoVault is a four channel thermally insulated oven temperature profiler. The QuadThermoVault features a stainless steel enclosure with PTFE insulation and can withstand oven temperatures of up to 662 °F (350 °C) for up to 25 minutes. The device sits at 2.45 in (62 mm), allowing it to fit inside most conveyer ovens, and comes equipped with four thermocouples to monitor multiple locations. An eight channel model is also available.

Time vs Temperature Chart

Ambient Temperature	Maximum Duration
212 °F (100 °C)	110 minutes
302 °F (150 °C)	62 minutes
392 °F (200 °C)	45 minutes
482 °F (250 °C)	35 minutes
500 °F (260 °C)	33 minutes
572 °F (300 °C)	30 minutes
662 °F (350 °C)	25 minutes

Shipping and Storage Data Loggers

Refrigerated Products
TransiTempII

The TransiTempII is a low cost, splash proof temperature data logger that is ideal for shipping applications between the range of -40 °F to +176 °F (-40 °C to +80 °C). 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.

Freezers Foods & Shipping Containers
Cryo-Temp

The Cryo-Temp is a stand alone, ultra low temperature logger that can measure as low as -122 °F (-86 °C) without the need for external probes. The enclosure is designed with a handle for easy attachment and is IP65 (splash proof). It is equipped with three LED's to signify logging, indicate when user-set warning limits have been breached and when temperature alarm limits have been exceeded. The features of this device make it ideal for monitoring frozen foods and shipping containers.

Thermocouple Based Wireless Temperature Data Logger
RFTCTemp2000A

The **RFTCTemp2000A** is a wireless thermocouple based temperature data logger. This device can measure both ambient temperature as well as thermocouple temperature and can be used for coolers, freezers, storage areas and more. It accepts all thermocouples types which allows the device to measure and record temperatures between -454 °F to +3308 °F (-270 °C to +1820 °C). The convenient LCD provides instant viewing of the current ambient and thermocouple readings, as well as access to minimum, maximum, and average statistics. Data is also sent wirelessly back to a central PC through the RFC1000 wireless network.

This RFTCTemp2000A also includes an audible alarm to alert users in close proximity. If the temperature exceeds the safe range, the audible alarm enables the user to take immediate action. Email, text message or on-screen alerts can also be configured.

Shown on table mount with glycol bottle accessory.

Shown on wall mount with thermocouple probe.

Thermocouple Probe Reference

Thermocouple	Range	Resolution	Accuracy
J	-346 °F to +1400 °F (-210 °C to +760 °C)	0.1 °C	±0.5 °C
K	-454 °F to +2498 °F (-270 °C to +1370 °C)	0.1 °C	±0.5 °C
T	-454 °F to +752 °F (-270 °C to +400 °C)	0.1 °C	±0.5 °C
E	-454 °F to +1796 °F (-270 °C to +980 °C)	0.1 °C	±0.5 °C
R	-58 °F to +3200 °F (-50 °C to +1760 °C)	0.5 °C	±2.0 °C
S	-58 °F to +3200 °F (-50 °C to +1760 °C)	0.5 °C	±2.0 °C
B	+122 °F to +3308 °F (+50 °C to +1820 °C)	0.5 °C	±2.0 °C
N	-454 °F to +2372 °F (-270 °C to +1300 °C)	0.1 °C	±0.5 °C

Standalone Data Loggers
Validating Egg Processes

Egg Shipping, Storage and Incubation
EggTemp & EggTemp–RH Data Loggers

The EggTemp and EggTemp-RH are submersible data loggers that are designed to thermally respond to an environment the same way a real egg does. The EggTemp measures and records temperature, while the EggTemp-RH measures temperature and humidity, simulating the experience of the actual product.

These devices are commonly used in monitoring the shipping and storage of eggs as well as monitoring pasteurization cycles. They can record temperatures up to 140 °F (60 °C) and have a maximum memory capacity of 32,767 readings.

Standalone Data Loggers
Canning & Beverage Applications


Canning
CF100 Canning Fitting

The CF100 Canning Fitting is an accessory for the HiTemp140 Data Logger Series. The CF100 secures the HiTemp140 data logger to cans, jar lids or other enclosures. The fixture allows the logger probe to be inserted into the can or container to monitor internal temperatures. Made of durable Silicone, Stainless Steel and Viton® Rubber the CF100 has the ability to withstand temperatures up with 302 °F (150 °C), making this product ideal for a variety of canning applications across a wide range of industries and environments.

Beverage Pasteurization
MicroTemp

The MicroTemp is a miniature, submersible temperature data logger. Only 2.6 in (66 mm) tall and 0.7 in (18 mm) in diameter, this recorder can easily fit into most beverage bottles and monitor and record temperature through the entire pasteurization cycle.
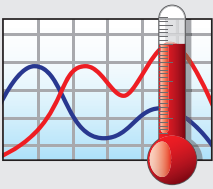
MadgeTech Data Logger Software

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 quality reports with just a click of the mouse. This software can be downloaded for free from the MadgeTech website.

Simple, Easy-to-use, Windows-based Software
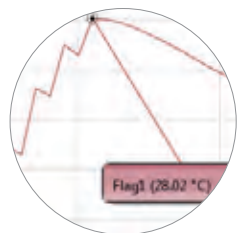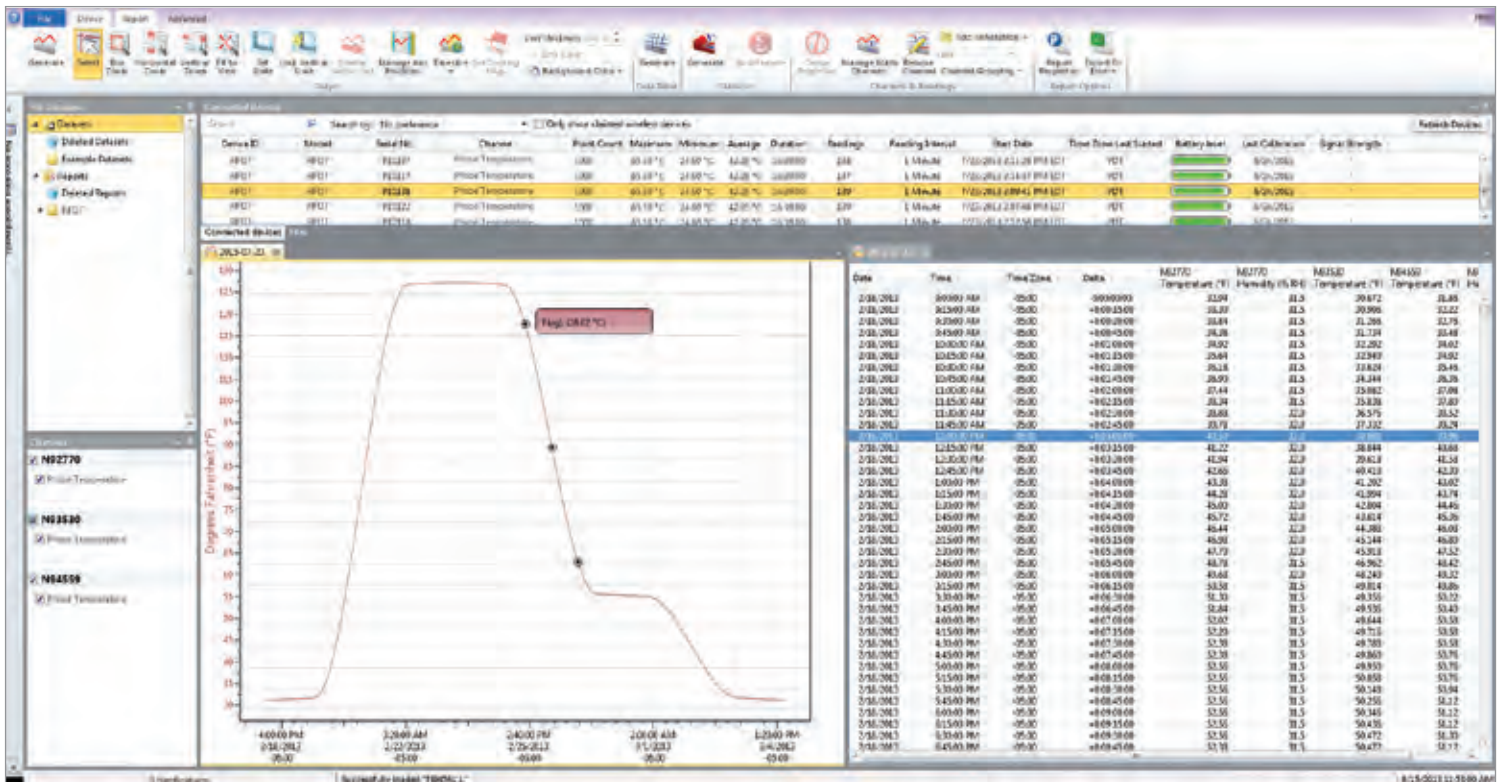
Cooling Flags

Graph View

Tabular Data View

Statistics
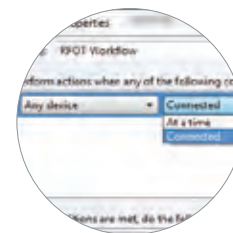
Automation
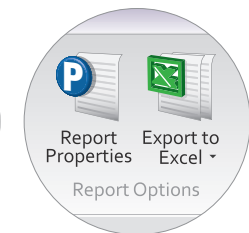
Copy to Excel

Software Features

- Multiple Graph Overlay
- Statistics
- Digital Calibration
- Zoom In / Zoom Out

- Timeslice
- Lethality Equations (F0, PU)
- Mean Kinetic Temperature
- Full Time Zone Support

- Data Annotation
- User Friendly File Management
- Min. / Max. / Average Lines
- Cooling Flags

- Data Table View
- Automatic Report Generation
- Summary View
- Workflows / Automation

MadgeTech Data Logger Software

MadgeTech 4.0 Software can communicate with multiple loggers through multiple interface cables. Capable of simultaneous start, stop and download of over 100 devices, this software serves as your virtual command center for large scale facilities and small. Display your data in graphs, with tabbed views and multi-monitor support. Utilize the infinite graphing flexibility by combining channels and datasets as desired. All graphing makes use of accelerated graphics hardware for real-time updating and high performance visuals.

The MadgeTech 4.0 Software is designed with a built-in database for automatic storage of downloaded data. The look and feel is organized much like standard email programs to aid in user friendliness and ease of use. The MadgeTech 4.0 software also offers extensive alarming options across multiple devices, wireless and non-wireless. Alarm output options include email, on-screen, text message and run-a-program alerts.

To round out the list of improvements, MadgeTech 4.0 has a powerful and comprehensive statistics system that allows the user to customize and view statistics as desired. Another feature is customizable engineering units. This enables users to support and program devices with many different unit types as well as the ability to display them as an alternate unit if desired.

The MadgeTech 4.0 Software is available to download for free from our website, **www.madgetech.com.**

Matrix

Product	RFOT	RFRHTemp2000A	RFTCTemp2000A	RFCO₂RHTemp2000A	Therm-A-lert-P	Therm-A-lert	Therm-A-lert-RH	HiTemp140
Measurement Range	-58 °F to +392 °F (-50 °C to +200 °C)	-4 °F to +140 °F (-20 °C to +60 °C) 0 %RH to 95 %RH	Ambient: -4 °F to +140 °F (-20 °C to +60 °C) — Thermocouple Dependant	0 ppm to 200,000 ppm +32 °F to +131 °F (0 °C to +55 °C) 0 %RH to 95 %RH	-328 °F to +500 °F (-200 °C to +260 °C)	-4 °F to +176 °F (-20 °C to +80 °C)	-4 °F to +176 °F (-20 °C to +80 °C) 0 %RH to 95 %RH non-condensing	-328 °F to +500 °F (-200 °C to +260 °C)
Resolution	0.018 °F (0.01 °C)	0.018 °F (0.01 °C) 0.1 %RH	0.018 °F (0.01 °C)	10 ppm 0.15 °F (0.08 °C) 0.08 %RH	0.018 °F (0.01 °C)	0.018 °F (0.01 °C)	0.018 °F (0.01 °C) 0.1 %RH	0.018 °F (0.01 °C)
Calibrated Accuracy	±0.18 °F / ±0.1 °C (+14 °F to +302 °F / -10 °C to +150 °C) ±0.9 °F / ±0.5 °C (outside of that range)	±0.9 °F / ±0.5 °C (+32 °F to +131 °F / 0 °C to +55 °C) ±3.0 %RH, ±2.0 %RH typical @ +25 °C (10 %RH to 90 %RH; +5 °C to +55 °C)	±0.9 °F (±0.50 °C)	±70 ppm ±1.0 °C ±3.0 %RH from 25 %RH to 75 %RH @ 25 °C, 7 %RH otherwise	±0.18 °F / ±0.1 °C (-4 °F to +176 °F / -20 °C to +80 °C)	±0.9 °F / ±0.5 °C (+32 °F to +122 °F / 0 °C to +50 °C)	±0.9 °F / ±0.5 °C (+32 °F to +122 °F / 0 °C to +50 °C) ±3.0 %RH (±2 %RH typical at +77 °F / +25 °C)	±0.18 °F / ±0.1 °C (+68 °F to +284 °F / +20 °C to +140 °C) ±0.54 °F / ±0.3 °C (-4 °F to +67.98 °F / -20 °C to +19.99 °C) ±0.72 °F / ±0.4 °C (-40 °F to -4.02 °F / -40 °C to -20.01 °C)
Operating Range	-4 °F to +212 °F (-20 °C to +100 °C) 0 %RH to 100 %RH	-4 °F to +140 °F (-20 °C to +60 °C) 0 %RH to 95 %RH	-4 °F to +140 °F (-20 °C to +60 °C) 0 %RH to 95 %RH	+32 °F to +131 °F (0 °C to +55 °C) 0 %RH to 95 %RH	-4 °F to +176 °F (-20 °C to +80 °C) 0 %RH to 95 %RH	-4 °F to +176 °F (-20 °C to +80 °C) 0 %RH to 95 %RH	-4 °F to +176 °F (-20 °C to +80 °C) 0 %RH to 95 %RH	-40 °F to +284 °F (-40 °C to +140 °C) 0 %RH to 100 %RH
Memory	20,000 Readings	16,128 Readings	16,128 Readings	10,752 Readings	30,000 Readings	30,000 Readings	15,000 Readings	32,700 Readings
IP Rating	IP67, Splash Proof	IP22	IP22	IP22	IP20	IP20	IP20	IP68
Material	Acetal Copolymer	ABS Plastic	ABS Plastic	ABS Plastic	ABS Plastic	ABS Plastic	ABS Plastic	316 Stainless Steel
Required Interface Cable	RFC1000	RFC1000	RFC1000	RFC1000	RFC1000	RFC1000	RFC1000	IFC400 or IFC406
Sensor	4.0 in (102 mm) External RTD Probe	Internal Sensor	Internal Sensor — External Thermocouple Probe, *Not Included*	External Sensor	4.5 in (114 mm) External RTD Probe	Internal Sensor	Internal Sensor	External RTD Probe
More Details	Refer to page 4	Refer to page 5	Refer to page 13	Refer to page 5	Refer to page 5	Refer to page 5	Refer to page 5	Refer to page 8

HACCP (Hazard Analysis and Critical Control Points): Seven Principal Steps

1. Conduct a hazard analysis
Identify the potential hazard(s) associated with food production at all stages, from primary production, processing, manufacture and distribution until the point of consumption. Assess the likelihood of occurrence of the hazard(s) and identify measures for their control.

2. Identify the critical control points (CCPs)
Determine the points, procedures, or operational steps that can be controlled to eliminate the hazard(s) or minimize its (their) likelihood of occurrence. A "step" means any stage in food production and/or manufacture including the receipt and/or production of raw materials, harvesting, transport, formulation, processing, storage, etc.

3. Establish critical limit(s)
Establish critical limit(s) which must be met to ensure the CCP is under control.

MadgeTech offers data loggers that enable the user to monitor and record temperature, humidity and other parameters to define and establish critical limits.

4. Establish Procedures to Monitor control of the CCP
a. What will be monitored   b. How will it be monitored   c. How often will it be monitored   d. Who will perform the monitoring

MadgeTech Data Loggers help users ensure that critical control limits are not exceeded. They can be used to validate ovens, freezers, coolers or be used to monitor the internal temperature of product in process.

HiTemp140-PT	HiTemp140-TSK	QuadThermoVault	TransiTempII	Cryo-Temp	EggTemp	EggTemp-RH	MicroTemp
-328 °F to +662 °F (-200 °C to +350 °C)	-328 °F to +500 °F (-200 °C to +260 °C)	Thermocouple Dependant	-40 °F to +176 °F (-40 °C to +80 °C)	-122.8 °F to +95 °F (-86 °C to +35 °C)	-32 °F to +140 °F (0 °C to +60 °C)	-32 °F to +140 °F (0 °C to +60 °C)	-40 °F to +176 °F (-40 °C to +80 °C)
0.018 °F (0.01 °C)	0.018 °F (0.01 °C)	0.09 °F (0.05 °C)	0.18 °F (0.1 °C)	0.18 °F (0.1 °C)	0.18 °F (0.1 °C)	0.18 °F (0.1 °C)	0.18 °F (0.1 °C)
±0.18 °F / ±0.1 °C (+68 °F to +284 °F / +20 °C to +140 °C) ±0.54 °F / ±0.3 °C (-4 °F to +67.98 °F / -20 °C to +19.99 °C) ±0.72 °F / ±0.4 °C (-40 °F to -4.02 °F / -40 °C to -20.01 °C)	±0.18 °F / ±0.1 °C (+68 °F to +284 °F / +20 °C to +140 °C) ±0.54 °F / ±0.3 °C (-4 °F to +67.98 °F / -20 °C to +19.99 °C) ±0.72 °F / ±0.4 °C (-40 °F to -4.02 °F / -40 °C to -20.01 °C)	±0.9 °F (±0.5 °C)	±0.9 °F (±0.5 °C) +10 °F to +104 °F (-10 °C to +40 °C)	±1.8 °F (±1.0 °C)	±0.9 °F (±0.5 °C)	±0.9 °F (±0.5 °C) ±3.0 %RH	±0.9 °F (±0.5 °C)
-40 °F to +284 °F (-40 °C to +140 °C) 0 %RH to 100 %RH	-328 °F to +482 °F (-200 °C to +250 °C) 0 %RH to 100 %RH	See Time vs Temperature Chart on Page 11	-40 °F to +176 °F (-40 °C to +80 °C) 0 %RH to 100 %RH	-122.8 °F to +95 °F (-86 °C to +35 °C) 0 %RH to 100 %RH	-32 °F to +140 °F (0 °C to +60 °C) 0 %RH to 100 %RH	-32 °F to +140 °F (0 °C to +60 °C) 0 %RH to 100 %RH	-40 °F to +176 °F (-40 °C to +80 °C) 0 %RH to 100 %RH
32,700 Readings	32,700 Readings	1,000,000 Readings per Channel	32,767 Readings	32,767 Readings	32,767 Readings	16,383 Readings per Channel	32,767 Readings
IP68	Not Rated	Not Rated	IP64	IP64	IP68	IP30	IP68
316 Stainless Steel	316 Stainless Steel Enclosure: PTFE	304 Stainless Steel with PTFE insulation	ABS Plastic	ABS Plastic	Enclosure: HDPE Logger: 316 Stainless Steel	Enclosure: HDPE Logger: 316 Stainless Steel	316 Stainless Steel
IFC400 or IFC406	IFC400 or IFC406	IFC200	IFC300	IFC300	IFC202	IFC202	IFC202
External RTD Probe	External RTD Probe	External Thermocouple Probe, Type K Thermocouple Included	Internal Sensor	Internal Sensor	Internal Sensor	Internal Sensor	Internal Sensor
Refer to page 8	Refer to page 10	Refer to page 11	Refer to page 12	Refer to page 12	Refer to page 14	Refer to page 14	Refer to page 15

5. Establish Corrective Action Procedures
Establish the corrective action to be taken when monitoring indicates that a particular CCP is not under control.

6. Establish a Record Keeping System
Establish documentation concerning all procedures and records appropriate to these principles and their application.

The MadgeTech Software makes record keeping a simple task. Easily tailor graphs and create custom reports for the product being processed to help comply with federal guidelines and regulations.

7. Establish Verification Procedures
Establish procedures for verification to confirm that the HACCP system is working effectively.

MadgeTech data loggers play a key role in the HACCP plan. MadgeTech offers SOP's (Standard Operating Procedure's) that aid the user to ensure the data loggers are installed correctly, operating properly and performing as they should.