

# Product User Guide

## Therm•A•lert Series



### Therm•A•lert

Wireless Temperature Data Logger

### Therm•A•lert-RH

Wireless Temperature & Humidity Data Logger

### Therm•A•lert-P

Wireless Temperature Data Logger with RTD Probe

# Table of Contents

## Therm•A•lert Data Logger Series

Product Overview .....	1
Quick Start Steps .....	2
Additional Features & Operation .....	3
Alarm Settings/Rules .....	3
Product Maintenance .....	3
Battery Replacement .....	3
Recalibration.....	3
Specifications.....	4-9

<b>Troubleshooting Tips</b> .....	Back Cover
-----------------------------------	------------

## Product Overview

The Therm•A•lert Series of precision wireless data loggers with alarm capabilities are designed specifically for laboratories, warehouses and other environments where continuous temperature monitoring is critical. The system can be used to monitor a single location, or expanded to monitor hundreds of locations over a broad area (additional MadgeTech wireless loggers and transceivers may be required). The series includes the following models:

Therm•A•lert Wireless Temperature Data Logger

Therm•A•lert-RH Wireless Temperature and Humidity Data Logger

Therm•A•lert-P Wireless Temperature Data Logger, equipped with a built in RTD probe that can be mounted inside of an ethylene glycol bottle.

### Therm•A•lert



### Therm•A•lert-RH



### Therm•A•lert-P

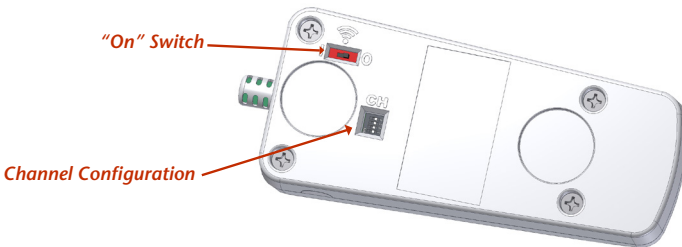


*Note: Glycol bottles in three sizes, 30mL, 60mL and 150mL for use with the Therm•A•lert-P (sold separately).*

## Quick Start Steps

1. Install the MadgeTech 4 Software and USB Drivers onto a Windows PC.
2. Plug an RFC1000 (sold separately) into a USB port on the base station computer. For transmissions over distances longer than 500' indoors line of sight (2,000' outdoors), plug additional RFC1000 into electrical outlets in between the base station computer and the Therm•A•lert device. The red LED will illuminate on the RFC1000 to signify that it has been connected correctly.
3. Flip the black switch on the back of the Therm•A•lert to the "On" position. (0 is "OFF", 1 is "ON". See diagram below.)
4. Launch the MadgeTech data logging software, the Therm•A•lert icon will automatically appear in the connected devices list, showing that the device has been recognized. Ensure that the "only show claimed wireless devices" is unchecked.

Select the logger in the connected devices list, and click the "claim" button, wait for the device to finish updating. Select the "Real-time Start" method from the device tab and choose a desired reading rate from the drop-down menu and click "start". (To set up or choose an Alarm for a Real-time Session, select the alarm rules tab (Refer to the Alarm Settings section).



## Additional Features and Operations

### Alarm Settings/Rules

1. To create an alarm rule, select Manage Rules in the device tab of the software.
2. Select New and enter a Rule name. Enter alarm parameters using the drop down menus and selection circles.
3. Select OK and choose the alarm to enable. The alarm bell is green when enabled and red when disabled.

## Product Maintenance

### Battery Replacement

Materials: #2 Phillips Head Screwdriver, replacement battery (TL-5104)

1. Using a Phillips head screw driver, unscrew the back enclosure of the data logger.
2. Remove the battery from the compartment.
3. Install the new battery, taking note of the polarity, verify that it is secure.
4. Close up the device and secure the screws back into place.

*Note: Be sure not to over tighten the screw or strip the threads.*

### Channel Programming

Different wireless channels may be used to create multiple networks in one area, or to avoid wireless interference from other devices. Any MadgeTech data logger or RFC1000 wireless transceiver on the same network is required to use the same channel. If the devices are not on the same channel, the devices will not communicate with one another. The Therm•A•lert is programmed by default on channel 25.

### Configuring the Channel Settings of the Therm•A•lert

1. Switch the wireless mode to **OFF** using the switch on the back of the device.
2. Find the dip switches located on the back of the device.
3. Change the dip switches to match the desired channel.
4. Return the device wireless mode to **ON**.

**CHANNEL NOTE:** MadgeTech wireless data loggers and RFC1000 wireless transceivers purchased prior to April 15, 2016 are programmed by default to channel 11. Please refer to the Product User Guide provided with these devices for instructions to change the channel selection if needed.

### Recalibration

Standard recalibration for the Therm•A•lert is one point at 25°C. For the Therm•A•lert-P standard recalibration is two points -10°C and +70°C. The Therm•A•lert-RH has two standard calibration types, one point for temperature at 25°C, the other is a two point calibration for humidity, 25°C and 75°C. Custom calibration and verification point options available. Recalibration is recommended annually for any MadgeTech data logger; a reminder is automatically displayed in the software when the device is due.

## Still need help?

For more troubleshooting tips and information, refer to the built in help section of the MadgeTech 4 software, visit our Knowledge Base online at [www.madgetech.com/kbase](http://www.madgetech.com/kbase) or contact us for customer support at 603-456-2011.

# Therm•A•Alert General Specifications

Reading Rate	1 reading every 2 seconds, up to 1 reading every 24 hours
Memory	30,000 readings; software configurable memory wrap
Memory Wrap	Yes
Start Modes	Immediate Start or Delay Start up to 18 months
Calibration	Digital calibration through software
Calibration Date	Automatically recorded within the device
Battery Type	3.6V lithium battery included; user replaceable TL-5104
Battery Life	2 years typical
Data Format	Date and time stamped °C, °F, °K and °R
Time Accuracy	±1 minute/month (at 25 °C)
Computer Interface	RFC1000 required for wireless operation (sold separately)
Software	XP SP3/Vista/Windows 7/Windows 8/Windows 10 (MadgeTech 4 only)
Operating Environment	-20 °C to +80 °C (-4 °F to +176 °F) 0 %RH to 95 %RH non-condensing
Dimensions	2.2" x 5.25" x 1.3" (55mm x 133mm x 33mm)
Enclosure Material	ABS Plastic
Approvals	CE

## Temperature

Temperature Range	-20 °C to +80 °C (-4 °F to +176 °F)
Resolution	0.01°C (0.018°F)
Calibrated Accuracy	±0.5°C/±0.9°F (0°C to +50°C/32°F to 122°F)

## Wireless

RF Frequency	2.45 GHz IEEE 802.15.4 ultra-low power wireless transceiver with fully bi-directional communication
Band	ISM band 2.405-2.475 GHz
Maximum Output Power	+0dBm typical
Receiver Sensitivity (RFC1000)	-95dBm typical
Transmission Distance (to other RFC1000s)	<ul style="list-style-type: none"> <li>• <b>RFC1000</b> 4,000 ft max. outdoors - line of sight unobstructed 1,000 ft max. indoors - typical urban environment</li> <li>• <b>RFC1000-CE</b> 2,500 ft max. outdoors - line of sight unobstructed 700 ft max. indoors - typical urban environment</li> <li>• <b>RFC1000-IP69K</b> 4,000 ft max. outdoors - line of sight unobstructed 1,000 ft max. indoors - typical urban environment</li> </ul>
Transmission Distance (to data loggers)	<ul style="list-style-type: none"> <li>• <b>RFC1000, RFC1000-CE &amp; RFC1000-IP69K</b> 2,000 ft max. outdoors - line of sight unobstructed 500 ft max. indoors - typical urban environment</li> </ul>

### Battery Warning

**WARNING: BATTERY MAY LEAK, FLAME OR EXPLODE IF DISASSEMBLED, SHORTED, CHARGED, CONNECTED TOGETHER, MIXED WITH USED OR OTHER BATTERIES, AND/OR EXPOSED TO FIRE/HIGH TEMPERATURE. DISCARD USED BATTERY PROMPTLY, KEEP OUT OF REACH OF CHILDREN.**

*Specifications subject to change.*

*See MadgeTech's terms and conditions at [www.madgetech.com](http://www.madgetech.com)*

## Therm•A•lert-P General Specifications

Reading Rate	1 reading every 2 seconds, up to 1 reading every 24 hours
Memory	30,000 readings; software configurable memory wrap
Memory Wrap	Yes
Start Modes	Immediate Start
Calibration	Digital calibration through software
Calibration Date	Automatically recorded within the device
Battery Type	3.6V lithium battery included; user replaceable TL-5104
Battery Life	2 years typical
Data Format	Date and time stamped °C, °F, °K and °R
Time Accuracy	±1 minute/month (at 25 °C)
Computer Interface	RFC1000 required for wireless operation (sold separately)
Software	XP SP3/Vista/Windows 7/Windows 8/Windows 10 (MadgeTech 4 only)
Operating Environment	-20 °C to +80 °C (-4 °F to +176 °F) 0 %RH to 95 %RH non-condensing
Dimensions	Data Logger: 2.2" x 5.25" x 1.3" (55mm x 133mm x 33mm) Wire: 9' Probe: 3/16" dia x 4.5"  Glycol bottle: 30mL: 2.5" x 1.5" x 1.5" (63mm x 38mm x 38mm) 60mL: 3.3" x 1.6" x 1.6" (84mm x 41mm x 41mm) 150mL: 5.7" x 2.3" x 2.3" (145mm x 58mm x 58mm)
Enclosure Material	ABS Plastic
Approvals	CE



## Temperature

Probe Temperature Range	-200 °C to +260 °C (-328 °F to +500 °F)
Lead Wire Range	-200 °C to +200 °C (-328 °F to +392 °F)
Glycol Bottle (optional) Range	-50°C to +80°C (-58°F to +176°F)
Resolution	0.01°C (0.018°F)
Probe Calibrated Accuracy	±0.1°C/±0.18°F (-20°C to +80°C/-4°F to +176°F) ±0.5°C/±0.9°F (outside of specified range)

## Wireless

RF Frequency	2.45 GHz IEEE 802.15.4 ultra-low power wireless transceiver with fully bi-directional communication
Band	ISM band 2.405-2.475 GHz
Maximum Output Power	+0dBm typical
Receiver Sensitivity (RFC1000)	-95dBm typical
Transmission Distance (to other RFC1000s)	<ul style="list-style-type: none"> <li>• <b>RFC1000</b> 4,000 ft max. outdoors - line of sight unobstructed 1,000 ft max. indoors - typical urban environment</li> <li>• <b>RFC1000-CE</b> 2,500 ft max. outdoors - line of sight unobstructed 700 ft max. indoors - typical urban environment</li> <li>• <b>RFC1000-IP69K</b> 4,000 ft max. outdoors - line of sight unobstructed 1,000 ft max. indoors - typical urban environment</li> </ul>
Transmission Distance (to data loggers)	<ul style="list-style-type: none"> <li>• <b>RFC1000, RFC1000-CE &amp; RFC1000-IP69K</b> 2,000 ft max. outdoors - line of sight unobstructed 500 ft max. indoors - typical urban environment</li> </ul>

### Battery Warning

**WARNING: BATTERY MAY LEAK, FLAME OR EXPLODE IF DISASSEMBLED, SHORTED, CHARGED, CONNECTED TOGETHER, MIXED WITH USED OR OTHER BATTERIES, AND/OR EXPOSED TO FIRE/HIGH TEMPERATURE. DISCARD USED BATTERY PROMPTLY, KEEP OUT OF REACH OF CHILDREN.**

*Specifications subject to change.*

*See MadgeTech's terms and conditions at [www.madgetech.com](http://www.madgetech.com)*

## Therm•A•lert-RH General Specifications

Reading Rate	1 reading every 2 seconds, up to 1 reading every 24 hours
Memory Wrap	Yes
Start Modes	Immediate Start or Delay Start up to 18 months
Calibration	Digital calibration through software
Calibration Date	Automatically recorded within the device
Battery Type	3.6V lithium battery included; user replaceable TL-5104
Battery Life	2 years typical
Data Format	Date and time stamped °C, °F, °K and °R
Time Accuracy	±1 minute/month (at 25 °C)
Computer Interface	RFC1000 required for wireless operation (sold separately)
Software	XP SP3/Vista/Windows 7/Windows 8/Windows 10 (MadgeTech 4 only)
Operating Environment	-20 °C to +80 °C (-4 °F to +176 °F) 0 %RH to 95 %RH non-condensing
Dimensions	2.2" x 5.25" x 1.3" (55mm x 133mm x 33mm)
Enclosure Material	ABS Plastic
Approvals	CE

## Temperature

Temperature Range	-20 °C to +80 °C (-4 °F to +176 °F)
Resolution	0.01°C (0.018°F)
Calibrated Accuracy	±0.5°C/±0.9°F (0°C to +50°C/32°F to 122°F)

## Humidity

Humidity Range	0 %RH to 95 %RH non-condensing
Resolution	0.1 %RH
Calibrated Accuracy	±3 %RH (±2 %RH typical at 25 °C/77 °F)

## Wireless

RF Frequency	2.45 GHz IEEE 802.15.4 ultra-low power wireless transceiver with fully bi-directional communication
Band	ISM band 2.405-2.475 GHz
Maximum Output Power	+0dBm typical
Receiver Sensitivity (RFC1000)	-95dBm typical
Transmission Distance (to other RFC1000s)	<ul style="list-style-type: none"> <li>• <b>RFC1000</b> 4,000 ft max. outdoors - line of sight unobstructed 1,000 ft max. indoors - typical urban environment</li> <li>• <b>RFC1000-CE</b> 2,500 ft max. outdoors - line of sight unobstructed 700 ft max. indoors - typical urban environment</li> <li>• <b>RFC1000-IP69K</b> 4,000 ft max. outdoors - line of sight unobstructed 1,000 ft max. indoors - typical urban environment</li> </ul>
Transmission Distance (to data loggers)	<ul style="list-style-type: none"> <li>• <b>RFC1000, RFC1000-CE &amp; RFC1000-IP69K</b> 2,000 ft max. outdoors - line of sight unobstructed 500 ft max. indoors - typical urban environment</li> </ul>

### Battery Warning

**WARNING: BATTERY MAY LEAK, FLAME OR EXPLODE IF DISASSEMBLED, SHORTED, CHARGED, CONNECTED TOGETHER, MIXED WITH USED OR OTHER BATTERIES, AND/OR EXPOSED TO FIRE/HIGH TEMPERATURE. DISCARD USED BATTERY PROMPTLY, KEEP OUT OF REACH OF CHILDREN.**

*Specifications subject to change.*

*See MadgeTech's terms and conditions at [www.madgetech.com](http://www.madgetech.com)*

# Troubleshooting Tips

## Why are my devices not appearing?

If your Therm•A•Alert isn't showing up in the connected devices panel, or you receive an error message while using the Therm•A•Alert, try the following:

- Check that your RFC1000 is properly connected. For more information, see Troubleshooting Interface Cable problems (below).
- Ensure that the battery is not discharged.
- Ensure that no other MadgeTech software is running in the background
- Ensure that you are using MadgeTech data logger software.
- Ensure that the Connected Devices panel is large enough to display devices. This can be verified by positioning the cursor on the edge of the Connected Devices panel until the resize cursor appears, then dragging the edge of the panel to resize it.

## Troubleshooting Interface Cable Problems

Check that the software recognizes your RFC1000 wireless receiver. If your device is not appearing in the Connected Devices list, it may be that the RFC1000 is not properly connected.

1. In the software, click the File Button, then click Options.
2. In the Options window, click Communications.
3. The Detected Interfaces box will list all of the available communication interfaces. If your RFC1000 is listed there, then the software has correctly recognized and is ready to use it.

## Check that Windows recognizes your RFC1000 wireless receiver

If the software does not recognize your RFC1000, there may be a problem with Windows or the USB drivers.

1. In Windows, click Start, right-click Computer and choose Properties or you can press Windows+Break as a keyboard shortcut.
2. Click Device Manager in the left hand column.
3. Double click Universal Serial Bus Controllers.
4. Look for an entry for Data Logger Interface.
5. If the entry is present, and there are no warning messages or icons, then windows has correctly recognized your RFC1000.
6. If the entry is not present, or has an exclamation point icon next to it, you may need to install the USB drivers. These are available on your software flash drive.

## Ensure that the USB end of the RFC1000 is securely connected to the computer

1. Locate the USB-A plug of your RFC1000.
2. If the interface cable is connected to your PC, unplug it.
3. Wait ten seconds, then reinsert it.
4. Check to make sure that the red LED is lit, indicating a successful connection.

### MadgeTech, Inc.

6 Warner Road • Warner, NH 03278

Phone 603.456.2011 • Fax 603.456.2012

www.madgetech.com • info@madgetech.com