

# RFOT

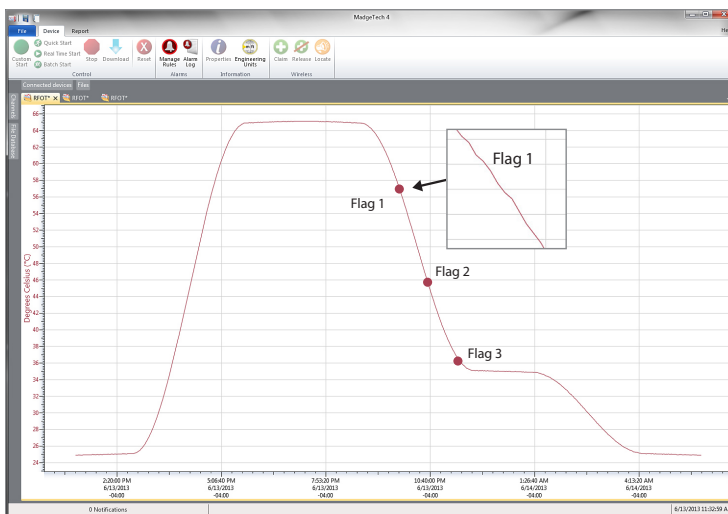
## Wireless Meat Temperature Data Logger

MadgeTech's RFOT is the most advanced wireless temperature data logger in the meat industry today. The RFOT's rugged design, equipped with a flexible piercing probe allows it to be used in the harshest environments. It is perfectly suited for smoke houses, ovens and other cooking processes up to 212 °F (100 °C) as well as refrigerators and freezers down to -4 °F (-20 °C). It is completely splash proof and can with-stand wash down cycles. This state-of-the-art device records and transmits internal product temperature readings back to a central computer for instant real-time monitoring.

The RFOT never needs to be connected to a computer as it has been designed for two way wireless communication. All communication can be performed directly from a central PC. In addition to wirelessly transmitting data, the RFOT also stores each reading to internal memory for backup. This back up data may be retrieved wirelessly at a later time.

MadgeTech's easy to use software features user programmable critical control points, called "cooling flags" to assist in compliance with USDA Appendix B. The "cooling flags" are automatically annotated on the graph and tabular data views. The summary tab provides the cool down duration between each critical control point. The data can also be automatically exported to Excel® for further calculations.

## MadgeTech 4 Software Features



Graph View

- 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
- Summary view



## Features

- Wireless 2 Way Communication
- Splash proof (IP67)
- Real-time Operation
- Battery Life Indicator
- Programmable Start Time
- Memory Wrap Around
- Field Upgradeable Firmware

## Benefits

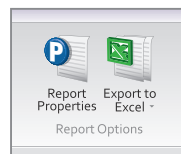
- No Wiring
- Fast Installation
- Minimal Long-Term Maintenance
- Long-Term Field Deployment

## Applications

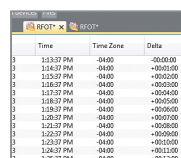
- Meat Processing
- Meat Storage
- Smoke Houses
- HACCP Compliance
- Complying with USDA Regulations
- Food Process Monitoring



Cooling Flags



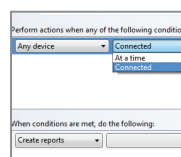
Export to Excel



This inset shows the 'Tabular Data View' of the software. It displays a table with columns for Time, Time Zone, and Delta. The table contains several rows of data, including timestamps and temperature readings.

| Time       | Time Zone | Delta     |
|------------|-----------|-----------|
| 1:13:37 PM | -0400     | -00:00:00 |
| 1:14:37 PM | -0400     | -00:00:00 |
| 1:15:37 PM | -0400     | -00:00:00 |
| 1:16:37 PM | -0400     | -00:00:00 |
| 1:17:37 PM | -0400     | -00:00:00 |
| 1:18:37 PM | -0400     | -00:00:00 |
| 1:19:37 PM | -0400     | -00:00:00 |
| 1:20:37 PM | -0400     | -00:00:00 |
| 1:21:37 PM | -0400     | -00:00:00 |
| 1:22:37 PM | -0400     | -00:00:00 |
| 1:23:37 PM | -0400     | -00:00:00 |
| 1:24:37 PM | -0400     | -00:00:00 |
| 1:25:37 PM | -0400     | -00:00:00 |

Tabular Data View



This inset shows the 'Automation' feature. It includes a section for 'Perform actions when any of the following conditions' and a section for 'When conditions are met, do the following:'. The conditions section has a dropdown for 'Any device' and a checkbox for 'Connected'. The actions section has a dropdown for 'Create reports'.

Automation

## SPECIFICATIONS

Specifications are subject to change without notice. Specific warranty remedy limitations apply.

| TEMPERATURE*                     |                                                                                  |
|----------------------------------|----------------------------------------------------------------------------------|
| <b>Probe Temperature Range</b>   | -50 °C to +200 °C (-58 °F to +392 °F)                                            |
| <b>Resolution</b>                | 0.01 °C (0.018 °F)                                                               |
| <b>Probe Calibrated Accuracy</b> | ±0.1 °C (14 °F to 212 °F / -10 °C to +100 °C)<br>±0.5 °C (outside of that range) |

| WIRELESS                                          |                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>RF Frequency</b>                               | 2.45 GHz IEEE 802.15.4 ultra-low power wireless transceiver with fully bi-directional communication                                                                                                                                                                                                                                                                      |
| <b>Band</b>                                       | ISM band 2.405-2.48 GHz                                                                                                                                                                                                                                                                                                                                                  |
| <b>Maximum Output Power</b>                       | +0 dBm typical (RFOT), 20 dBm maximum (RFC1000)                                                                                                                                                                                                                                                                                                                          |
| <b>Receiver Sensitivity (RFC1000)</b>             | -95 dBm typical (RFOT), -104 dBm typical (RFC1000)                                                                                                                                                                                                                                                                                                                       |
| <b>Transmission Distance (to data loggers)</b>    | RFC1000, RFC1000-CE & RFC1000-IP69K<br>2,000 ft max. outdoors - line of sight unobstructed<br>500 ft max. indoors - typical urban environment                                                                                                                                                                                                                            |
| <b>Transmission Distance (to other RFC1000's)</b> | RFC1000<br>4,000 ft max. outdoors - line of sight unobstructed<br>1,000 ft max. indoors - typical urban environment<br>RFC1000-CE<br>2,500 ft max. outdoors - line of sight unobstructed<br>700 ft max. indoors - typical urban environment<br>RFC1000-IP69K<br>4,000 ft max. outdoors - line of sight unobstructed<br>1,000 ft max. indoors - typical urban environment |

| GENERAL             |                                                          |
|---------------------|----------------------------------------------------------|
| <b>Reading Rate</b> | 1 reading every 2 seconds up to 1 reading every 24 hours |
| <b>Memory</b>       | 21,504 readings; software configurable memory wrap       |
| <b>Wrap Around</b>  | Yes                                                      |

\*Temperature specifications based on ideal 100 Ω Pt RTD compliant with IEC 751 (1983) and ITS-90.

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Start Modes</b>                    | Immediate start / delay start                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Calibration</b>                    | Digital calibration through software                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Calibration Date</b>               | Automatically recorded within device                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Battery Type</b>                   | 3.6V lithium battery included; <b>user replaceable</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Battery Life</b>                   | 2 years typical at 15 second reading rate                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>IP Rating</b>                      | IP67                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Data Format</b>                    | Date and time stamped °C, °F, K, °R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Time Accuracy</b>                  | ±10 second / month (at 25 °C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Computer Interface</b>             | USB; 115,200 baud                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Operating System Compatibility</b> | Windows XP SP3 or later                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Software Compatibility</b>         | Standard Software version 2.00.72 or later<br>Secure Software version 2.03.06 or later                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Operating Environment</b>          | -20 °C to +100 °C (-4 °F to 212 °F)<br>0 %RH to 100 %RH non-condensing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Dimensions</b>                     | <b>Body:</b> 7.8 in x 1.62 in dia. (198 mm x 41 mm dia.)<br><b>Hook ID:</b> 0.625 in (16 mm)<br><b>Cable Length:</b> 30 in (760 mm)                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Probe Lengths</b>                  | <ul style="list-style-type: none"> <li>• <b>RFOT-FR:</b> 1.75 in (45 mm), Tip Diameter: 0.063 in (1.6 mm) Tip Length: 1.25 in (32 mm)</li> <li>• <b>RFOT-4-TD:</b> 4.00 in (102 mm), Tip Diameter: 0.125 in (3.2 mm), Tip Length: 3.50 in (89 mm)</li> <li>• <b>RFOT-4:</b> 4.00 in (102 mm), Tip Diameter: 0.188 in (4.8 mm), Tip Length: Full</li> <li>• <b>RFOT-7:</b> 7.00 in (177 mm), Tip Diameter: 0.188 in (4.8 mm), Tip Length: Full</li> <li>• <b>RFOT-12:</b> 12.00 in (305 mm), Tip Diameter: 0.188 in (4.8 mm), Tip Length: Full</li> </ul> |
| <b>Material</b>                       | <b>Body:</b> Radel R-5100<br><b>Cable Jacket:</b> Silicone Polyurethane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Weight</b>                         | 8.8 oz (250 g)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Approvals</b>                      | US (FCC), CA (IC), CE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

**BATTERY WARNING:** FIRE, EXPLOSION AND SEVERE BURN HAZARD. DO NOT RECHARGE, DISASSEMBLE, HEAT ABOVE 100 °C (212 °F), INCINERATE, CRUSH, OR EXPOSE CONTENTS TO WATER.

## Ordering Information

|                      |                                                                                                                                |                                                                                                           |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>RFOT</b>          | PN 902143-00 = RFOT-FR<br>PN 902144-00 = RFOT-4<br>PN 902145-00 = RFOT-4-TD<br>PN 902146-00 = RFOT-7<br>PN 902147-00 = RFOT-12 | Wireless Temperature Data Logger                                                                          |
| <b>RFC1000</b>       | PN 901383-00                                                                                                                   | Wireless RF receiver/repeater. USB to mini USB adapter & power supply included                            |
| <b>RFC1000-CE</b>    | PN 901338-00                                                                                                                   | Wireless RF transceiver/repeater, CE approved for Europe. USB to mini USB adapter & power supply included |
| <b>RFC1000-IP69K</b> | PN 901389-00                                                                                                                   | Wireless RF transceiver/repeater, splash proof with an IP69K rating. USB to mini USB adapter included     |
| <b>TLH-5903</b>      | PN 901748-00                                                                                                                   | Replacement battery for RFOT                                                                              |

**Countries approved for use, purchase and distribution of the RFOT:** Australia, Austria, Belgium, Bulgaria, Canada, Chile, China, Colombia, Croatia, Cyprus, Czech Republic, Denmark, Ecuador, Estonia, Finland, France, Germany, Greece, Honduras, Hungary, Iceland, Ireland, Israel, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Mexico, New Zealand, Norway, Peru, Poland, Portugal, Romania, Saudi Arabia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, The Netherlands, Turkey, United Kingdom, United States, Venezuela, Vietnam