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THERMASENSE | HT

Ambient Humidity & Temperature Sensor



Product User Guide

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Quick Start Steps

Product Operation (Wireless)

1. Install the ThermaSense Software and USB Drivers onto a Windows PC.
2. Connect the ThermaSense Link wireless transceiver (sold separately) to the Windows PC with the provided USB cable.
3. Push and hold the wireless button on the ThermaSense HT for 5 seconds to activate wireless communication. The display will confirm “Wireless: ON” and the blue LED will blink every 15 seconds.
4. Launch the ThermaSense Software. All active data loggers that are within range will automatically appear in the Connected Devices window.
5. Select the data logger within the Connected Devices window and click the **Claim** icon.
6. Select the start method, reading rate and any other parameters appropriate for the desired data logging application. Once configured, deploy the data logger by clicking **Start**.
7. To download data, select the device in the list, click the **Stop** icon, and then click the **Download** icon. A graph will automatically display the data.

Product Operation (Plugged In)

1. Install the ThermaSense Software and USB Drivers onto a Windows PC.
2. Confirm the data logger is not in wireless mode. If wireless mode is on, press and hold the Wireless button on the device for 5 seconds.
3. Connect the data logger to the Windows PC with the provided USB cable.
4. Launch the ThermaSense Software. The ThermaSense HT will appear in the Connected Devices window indicating the device has been recognized.
5. Select the start method, reading rate and any other parameters appropriate for the desired data logging application. Once configured, deploy the data logger by clicking the **Start** icon.
6. To download data, select the device in the list, click the **Stop** icon, and then click the **Download** icon. A graph will automatically display the data.

Product Overview

The ThermaSense HT is a wireless temperature and humidity data logger, featuring a convenient LCD screen to display current readings, minimum, maximum and average statistics, battery level and more. User programmable alarms can be configured to activate an audible buzzer and LED alarm indicator, notifying the user when the temperature or humidity levels are above or below the user set threshold. Email and text alarms can also be configured allowing users to be notified from almost anywhere.

Selection Buttons

The ThermaSense HT is designed with three direct selection buttons:

- » **Scroll:** Allows user to scroll through current readings, average stats and device status information displayed on the LCD Screen.
- » **Units:** Allows users to change displayed units of measurement to either Fahrenheit or Celsius.
- » **Wireless:** Push and hold this button for 5 seconds to activate or deactivate wireless communication.

Users have the ability to manually reset the statistics within the device to zero without needing to use the ThermaSense Data Logger Software. Any data recorded up to that point is recorded and saved. To apply the manual reset, press and hold the scroll key down for three seconds.

LED Indicators

- » **Status:** Green LED blinks every 5 seconds to indicate the device is logging.
- » **Wireless:** Blue LED blinks every 15 seconds to indicate the device is operating in wireless mode.
- » **Alarm:** Red LED blinks every 1 second to indicate an alarm condition is set.

Mounting Instructions

The base provided with the ThermaSense HT can be used in two ways:



Mounting: The base securely snap to the data logger for wall place to use on a tabletop or horizontal surface. There are two holes in the base to allow for screws.

***Note:** Using the base for tabletop mount will slow the temperature and humidity response time.*

Software Installation



ThermaSense Software

The ThermaSense Software makes the process of downloading and reviewing data quick and easy, and is free to download from the ThermaSense website.

Installing the ThermaSense Software

1. Download the ThermaSense Software on a Windows PC by going to: www.thermasense.com/software-download.
2. Locate and unzip the downloaded file (typically you can do this by right clicking on the file and selecting **Extract**).
3. Open the **TSInstaller.exe** file.
4. You will be prompted to select a language, then follow the instructions provided in the ThermaSense Setup Wizard to finish the software installation.

Installing the USB Interface Driver

USB Interface Drivers can easily be installed on a Windows PC, if they are not already available and running.

1. Download the USB Interface Driver on a Windows PC by going to: www.thermasense.com/software-download.
2. Locate and unzip the downloaded file (typically you can do this by right clicking on the file and selecting **Extract**).
3. Open the **PreInstaller.exe** file.
4. Select **Install** on the dialog box.

For more detailed information, download the MadgeTech Software Manual at:
www.thermasense.com/thermasense-software-manual.pdf



MadgeTech Cloud Services for ThermaSense

MadgeTech Cloud Services allows users to remotely monitor and manage groups of data loggers throughout a large facility or multiple locations, from any internet enabled device. Transmit real-time data to the MadgeTech Cloud Services platform via the ThermaSense Data Logger Software running on a central PC.

Sign up for a MadgeTech Cloud Services account at www.madgetech.com/cloud.

For more detailed information, download the MadgeTech Cloud Services Manual at:
www.madgetech.com/mt-cloud-manual.pdf

Activating & Deploying the Data Logger

1. Connect the ThermaSense Link wireless transceiver (sold separately) to the Windows PC with the provided USB cable.
2. Additional ThermaSense Link's can be used as repeaters to transmit over greater distances. If transmitting over a distance greater than 500 feet indoors, 2,000 feet outdoors or if there are walls, obstacles or corners that need to be maneuvered around, set up additional transceivers as needed. Plug each one into an electrical outlet in the desired locations.
3. Verify that the data loggers are in wireless transmission mode. Push and hold the **Wireless** button on the data logger for 5 seconds to activate or deactivate wireless communication.
4. On the Windows PC, launch the ThermaSense Software.
5. All active data loggers will be listed in the Device tab within the Connected Devices panel.
6. To claim a data logger, select the desired data logger in the list and click the **Claim** icon.
7. Once the data logger has been claimed, select a start method in the Device tab.

For steps to claim the data logger and view data using MadgeTech Cloud Services, refer to the MadgeTech Cloud Services Software Manual at: www.madgetech.com/mt-cloud-manual.pdf

Channel Programming

Different wireless channels may be used to create multiple networks in one area, or to avoid wireless interference from other devices. Any ThermaSense data logger or wireless transceiver that is on the same network is required to use the same channel. If all of the devices are not on the same channel, the devices will not communicate with one another. ThermaSense wireless data loggers and ThermaSense Link wireless transceivers are programmed by default on channel 25.

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Changing the channel settings of the ThermaSense HT

1. Switch the wireless mode to **OFF** by holding down the **Wireless** button on the data logger for 5 seconds.
2. Using the provided USB cable, plug the data logger into the PC.
3. Open the ThermaSense Software. Locate and select the data logger in the **Connected Devices** panel.
4. In the Device tab, click the **Properties** icon.
5. Under the Wireless tab, select a desired channel (11 - 25) that matches the transceiver.
6. Save all changes.
7. Disconnect the data logger.
8. Return the device to wireless mode by holding down the **Wireless** button for 5 seconds.

To configuring the channel settings of the ThermaSense Link wireless transceiver (sold separately), please refer to the Product User Guide for that product. Download it from the ThermaSense website at www.thermasense.com.

Continue to page 7 for additional wireless channel information.

Product Maintenance

Battery Replacement

Materials: U9VL-J Battery (available from www.madgetech.com)

1. On the bottom of the data logger, open the battery compartment by pulling in on the cover tab.
2. Remove the battery by pulling it from the compartment.
3. Install the new battery, taking note of the polarity.
4. Push the cover closed until it clicks.

Recalibration

Standard recalibration for the ThermaSense HT is one point at 25 °C for the temperature channel, and two points at 25 %RH and 75 %RH for the humidity channel. **Factory recalibration is recommended annually for all ThermaSense data loggers.** A reminder is automatically displayed in the software when the device is due.

RMA Instructions

To send a device back to MadgeTech for calibration, service or repair, follow the instructions below to create an RMA (Return Merchandise Authorization) on the MadgeTech website:

Go to www.madgetech.com and click the Services menu to make the appropriate selection and follow the on screen instructions.

Troubleshooting

Why is the wireless data logger not appearing in the software?

If the ThermaSense HT doesn't appear in the **Connected Devices** panel, or an error message is received while using the ThermaSense HT, try the following:

- » Check that the ThermaSense Link is properly connected. For more information, see *Troubleshooting wireless transceiver problems* (below).
- » Ensure that the data logger battery is not discharged. For best voltage accuracy, use a voltage meter connected to the battery of the device. If possible, try switching the battery with a new 9V lithium.
- » 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.
- » Ensure that the data logger and transceiver are on the same wireless channel. If the devices are not on the same channel, the devices will not communicate with one another. Please refer to the Channel Programming section for information on changing the device channel.

Troubleshooting wireless transceiver problems

Check that the software properly recognizes the connected wireless transceiver.

If the wireless data logger is not appearing in the **Connected Devices** list, it may be that the ThermaSense Link is not properly connected.

1. In the ThermaSense 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 the transceiver is listed here, then the software has correctly recognized and is ready to use it.

Check that Windows recognizes the connected wireless transceiver.

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

1. In Windows, click **Start**, right-click **Computer** and choose **Properties**.
2. Select **Device Manager** in the left hand column.
3. Double-click on **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 the connected transceiver.
6. If the entry is not present, or has an exclamation point icon next to it, the USB drivers may need to be installed. USB drivers can be downloaded from the ThermaSense website.

Ensure that the USB end of the ThermaSense Link is securely connected to the computer.

1. If the cable is connected to the PC, unplug it and wait ten seconds.
2. Reconnect the cable to the PC.
3. Check to make sure that the red LED is lit, indicating a successful connection.

Compliance Information

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

To satisfy FCC RF Exposure requirements for mobile and base station transmission devices, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at closer than this distance is not recommended. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Countries approved for use, purchase and distribution:

Australia, Austria, Belgium, Bulgaria, Canada, Chile, China, Columbia, Croatia, Cyprus, Czech Republic, Denmark, Ecuador, Estonia, Finland, France, Germany, Greece, Honduras, Hungary, Iceland, Ireland, Israel, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malaysia, Malta, Mexico, New Zealand, Norway, Peru, Poland, Portugal, Romania, Saudi Arabia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Thailand, The Netherlands, Turkey, United Kingdom, United States, Venezuela, Vietnam

Temperature

Range	-20 °C to +60 °C (-4 °F to +140 °F)
Resolution	0.01 °C (0.018 °F)
Calibrated Accuracy	±0.5 °C at 0 °C to +55 °C (± 0.9 °F at 32 °F to 131 °F)
Response Time	10 minutes free air

Humidity

Range	0 %RH to 95 %RH
Resolution	0.1 %RH
Calibrated Accuracy	±3.0 %RH, ±2.0 %RH typical at 25 °C (10 %RH to 90 %RH; 5 °C to 55 °C)
Response Time	2 minutes to 63 % of change

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. Operation (channels 11 through 25) @ 250 kbps
Maximum Output Power	+0 dBm typical
Wireless Interface	RFC1000, RFC1000-CE, RFC1000-IP69K or RFC1000 Cloud Relay
Transmission Distance	Unobstructed line of sight (outdoors): 2,000 feet max Typical urban environment (indoors): 500 feet max

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

General Specifications

Operating Environment	-20 °C to +60 °C (-4 °F to +140 °F); 0 %RH to 95 %RH non-condensing
Reading Rate	1 reading every second up to 1 reading every 24 hours
Memory	16,128 readings
LED Functionality	<ul style="list-style-type: none"> • Green LED blinks every 5 seconds to indicate unit is logging • Blue LED blinks every 15 seconds to indicate unit is in wireless mode • Red LED blinks every 1 second to indicate alarm condition
Memory Wrap Around	Yes

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Start Modes	Immediate Start
Calibration Date	Automatically recorded within device
Battery Type	Ultralife 9V lithium battery included; user replaceable
Battery Life	3 years typical at 1 minute reading rate
Data Format	<ul style="list-style-type: none"> • Display: °C or °F, %RH • Software: Date and time stamped °C, K, °F, or °R, %RH, mg/mL, Dew Point - °C / K / °F / °R
Time Accuracy	±1 minute/month
Computer Interface	Stand-alone Operation: USB to mini USB Wireless Operation: ThermaSense Link wireless transceiver
PC Compatibility	ThermaSense Data Logger Software running on: Windows 10, 8, 7, Vista, Window XP with SP3
MadgeTech Cloud Services Compatible	Yes
Dimensions	3.0 in x 3.5 in x 0.95 in (76.2 mm x 88.9 mm x 24.1 mm) - <i>Data logger only</i>
Weight	4.1 oz (116.2 g)
Enclosure Material	ABS Plastic
Alarm	<ul style="list-style-type: none"> • User configurable audible, on-screen, email and text (SMS) alarms. • Alarm Delay: A cumulative alarm delay may be set in which the device will activate the alarm (via LED) only when the device has recorded a user specified time duration of data.
Audible Alarm Functionality	1 beep per second for reading alarm above/below threshold
Approvals	US (FCC), CA (IC), CE, South Korea (KCC), China (CMIIT), Japan (LCIE)

Specifications subject to change. See MadgeTech's Terms and Conditions at www.madgetech.com

Need Help?

Product Support & Troubleshooting:

- » Refer to the Troubleshooting section of this document.
- » Contact our friendly Customer Support Team at (603) 456-2011 or support@madgetech.com.

ThermaSense Software Support:

- » Refer to the built-in help section of the ThermaSense Software.
- » Download the ThermaSense Software Manual at: www.thermasense.com/thermasense-ftware-manual.pdf



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