



ALTA Wireless Food Probe **USER GUIDE**

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I. ABOUT THE WIRELESS FOOD PROBE

GENERAL DESCRIPTION

The [ALTA® Wireless Food Probe](#) assesses the temperature of solid or liquid foods to ensure they are safe and ready-to-eat. Equipped with a leaded needle probe, the device measures temperatures up to 260°C (500°F) and accurately reports the internal temperature of cooked or refrigerated food. Temperatures are displayed on the device's screen and recorded in iMonnit software, creating an easy-to-read log of current and past readings. Probe settings—including notifications, alerts, reports, and maps—are customizable via iMonnit's online interface. Up and running within 15 minutes, this industry-leading food probe supports CFR21 part 11 programs.

The Food Probe utilizes an RTD temperature probe to provide long-term, highly accurate temperature readings. The sensor features an on-unit display and two buttons. When pressed, the Display button will provide a new temperature reading that will not be reported to iMonnit. Momentarily pressing the Record button will record and then transmit a single data point. When the Record button is held down, the display will activate, and the sensor will start a continuous data recording session based on configurations in iMonnit.

ALTA WIRELESS FOOD PROBE FEATURES

- IP67 Waterproof
- Wireless range of 1,200+ feet through 12+ walls*
- Frequency-Hopping Spread Spectrum (FHSS)
- Superior interference immunity
- Excellent power management for long battery life **
- Encrypt-RF® Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- Datalogs 2000 to 4000 readings if gateway connection lost (non-volatile flash, persists through power cycle):
 - 10-minute heartbeats = 22 days
 - 2-hour heartbeats = 266 days

* Actual range may vary depending on environment.

** Battery life is determined by sensor reporting frequency, battery type, and other variables.

EXAMPLE APPLICATIONS

- Ovens and cooking device monitoring
- Food temperature monitoring
- Food service management



II. SENSOR SECURITY

The ALTA Food Temperature Probe has been designed and built to securely manage data from sensors monitoring your environment and equipment. Monnit Corporation has taken extreme measures to ensure your data security is handled with the utmost care and attention to detail. The same methods utilized by financial institutions to transmit data are also used in Monnit security infrastructure. Security features of the gateway include tamper proof network interfaces, data encryption, and bank-grade security.

Monnit's proprietary sensor protocol uses low transmit power and specialized radio equipment to transmit application data. Wireless devices listening on open communication protocols cannot eavesdrop on sensors. Packet level encryption and verification is key to ensuring traffic isn't altered between sensors and gateways. Paired with best-in-class range and power consumption protocol, all data is transmitted securely from your devices. Thereby ensuring a smooth, worry-free, experience.

SENSOR COMMUNICATION SECURITY

Monnit sensor to gateway secure wireless tunnel is generated using ECDH-256 (Elliptic Curve Diffie-Hellman) public key exchange to generate a unique symmetric key between each pair of devices. Sensors and gateways use this link specific key to process packet level data with hardware accelerated 128-bit AES encryption which minimizes power consumption to provide industry best battery life. Thanks to this combination, Monnit proudly offers robust bank-grade security at every level.

DATA SECURITY ON THE GATEWAY

The ALTA gateways are designed to prevent prying eyes from accessing the data that is stored on the sensors. Gateways do not run on an off the shelf multi-function OS (operating system). Instead they run a purpose specific real-time embedded state machine that cannot be hacked to run malicious processes. There are also no active interface listeners that can be used to gain access to the device over the network. The fortified gateway secures your data from attackers and secures the gateway from becoming a relay for malicious programs.

iMONNIT SECURITY

iMonnit is the online software and central hub for configuring your device settings. All data is secured on dedicated servers operating Microsoft SQL Server. Access is granted through the iMonnit user interface, or an Application Programming Interface (API) safeguarded by 256-bit Transport Layer Security (TLS 1.2) encryption. TLS is blanket of protection to encrypt all data exchanged between iMonnit and you. The same encryption is available to you whether you are a Basic user or Premiere user of iMonnit. You can rest assured that your data is safe with iMonnit.

III. ORDER OF OPERATIONS

It is important to understand the order of operations for activating your device. If done out of order, your device may have trouble communicating with iMonnit. Please consult the steps below to make sure you are performing your setup correctly.

SET-UP STEPS

1. Register your gateway on iMonnit.

Your gateway must be registered first to verify communication between the device and iMonnit. Any sensors you wish to add onto your network must come after the gateway.

2. Register your ALTA Food Probe on iMonnit.

After you've registered your gateway, it's time to add your Food Probe to the iMonnit account.

3. Install batteries in your device.

After your device is added and your gateway is communicating with iMonnit, you can install the batteries. Your Food Probe takes AAA batteries.

4. Start recording temperatures.

Check food safety guidelines at your company for the preferred interval of temperature testing regarding cooked, reheated, or refrigerated product.

Note: Each step is covered in more detail in the following sections.

IV. REGISTRATION

If this is your first time using the iMonnit online portal, you will need to create a new account. If you have already created an account, start by logging in. For instructions on how to register for an iMonnit account, please consult the iMonnit User Guide viewable at <https://www.monnit.com/support/documentation>.

STEP 1: ADD DEVICE

1. Add the sensor on iMonnit.

Add the sensor to your account by choosing **Sensors** in the main menu. Navigate to the **Add Sensor** button.

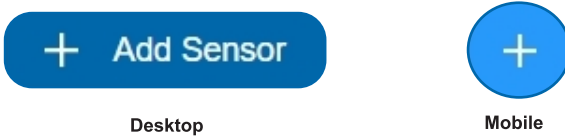


Figure 1

2. Find the device ID. See Figure 2.

The Device ID (ID) and Security Code (SC) are necessary to add a sensor. These can both be located on the label on the side of your device.

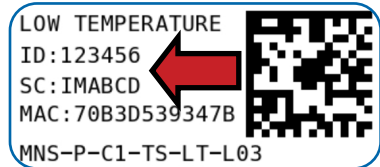


Figure 2

3. Adding your device. See Figure 3.

You will need to enter the Device ID and the Security Code from your Sensor in the corresponding text boxes. Use the camera on your smartphone to scan the QR code on your device. If you do not have a camera on your phone, or the system is not accepting the QR code, you may enter the Device ID and Security Code manually.

- The Device ID is a unique number located on each device label.
- Next, you'll be asked to enter the Security Code from your device. A security code consists of letters and must be entered in upper case (no numbers). It can also be found on the barcode label of your device.



Figure 3

When completed, select the **Add Device** button.

STEP 2: SETUP

Select your use case. See Figure 4.

Unlike most sensors, choosing a use case in Step 2 of adding this sensor does not give you the option to customize your settings. These will need to be adjusted in the settings tab for your device. See page 9 for instructions.

Select the **Skip** button when completed.

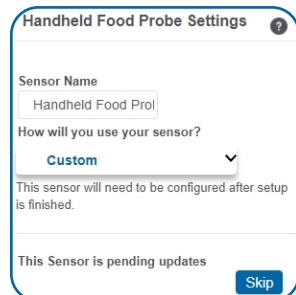


Figure 4

STEP 3: VALIDATION

Check your signal. See Figure 5.

The validation checklist will help you ensure your sensor is communicating with the gateway properly and you have a strong signal.

Checkpoint 4 will only complete when your sensor achieves a solid connection to the gateway. Once you insert the batteries (or flip the switch on an industrial sensor) the sensor will communicate with the gateway every 30 seconds for the first few minutes.

Select the **Save** button when completed.

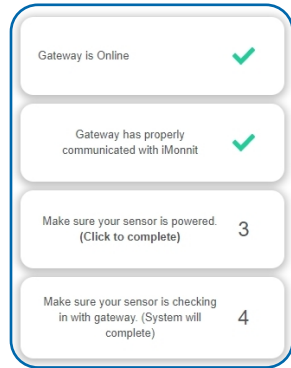


Figure 5

STEP 4: ACTIONS

Choose your actions. See Figure 6.

Actions are the alerts that will be sent to your phone or email in the event of an emergency. Low battery life and device inactivity are two of the most common actions to have enabled on your device. See page 12 for how to set actions for your sensor.

Select the **Done** button when completed.

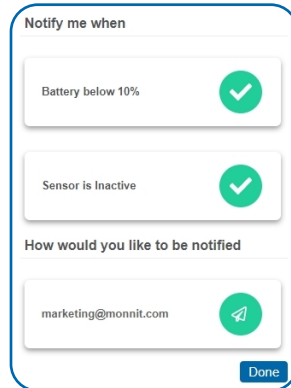


Figure 6

V. SETTING UP YOUR FOOD PROBE

When you are finished adding the device to your account, the next step is to insert the 2 AAA batteries.

INSTALLING BATTERIES

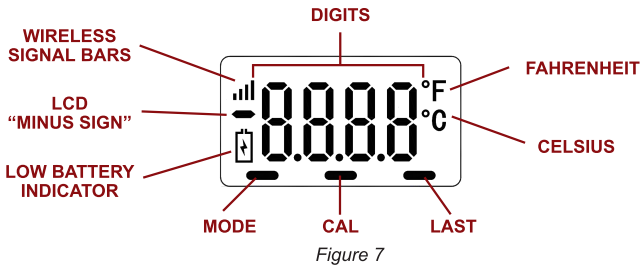
The standard version of this device is powered by two replaceable AAA sized batteries (included with purchase). The typical battery life is one year.

Place batteries in the device by first removing the four screws, then remove the battery door. Insert fresh AAA batteries in the carriage. Replace battery door and screws.

Important: Battery door must be correctly re-installed to ensure the device remains waterproof.

Complete the process by opening up iMonnit and selecting **Sensors** from the main navigation menu. Verify that iMonnit is showing the sensor has a full battery level.

SCREEN READOUT DISPLAY



Wireless signal bars:

Blinking signal bars: Sensor is NOT connected to gateway.
(Only on a single display button press.)

No signal bars: No parent or less than 12% (-110 RSSI) signal strength.

One signal bar: 12% (-110 RSSI) to 36% (-100 RSSI)

Two signal bars: 37% (-101 RSSI) to 75% (-75 RSSI)

Three signal bars: 76% (-74 RSSI) to 99% (-51 RSSI)

Four signal bars: 100% (-50 RSSI) or greater

Dashes (Mode – Cal – Last.):

- When Mode is lit, the sensor is in a measurement session. Otherwise it is not in session.
- Cal is lit when the "ice bath" calibration is occurring, otherwise off.
- Last is showing when the temperature displayed is the last measurement that was transmitted. Otherwise, the most recent local measurement is displayed.

ERROR CODES

- ERR 1: Probe not detected
- ERR 2: Short detected (possible water in 3.5 mm jack)
- ERR 3: Measurement out of range (probe reading above or below $-50^{\circ} - 265^{\circ}\text{C}$ / $-58^{\circ} - 509^{\circ}\text{F}$)
- ERR 4: Failed ice bath calibration (measuring outside of $\pm 10\text{C}$)
- ERR 5: Not connected to gateway. No record operation possible (if the sensor has not been connected to a gateway since powering on, the "Last" function will display 0.0°C as there is no previous data to display)

USING THE FOOD PROBE

Before using the Food Probe, make sure the probe has been properly sanitized after every use. The probe uses RTD-based hardware so that it does not need to be re-calibrated after every use.

Note: The sensor should be re-calibrated if the temp probe is changed.

Taking the Food Probe, insert the stem of the needle-probe into the thickest part of the food sample, or in the center of the product if the item is even in thickness. Stews, soup, etc. should be stirred beforehand to evenly distribute heat prior to testing temperature.

The front of your Food Probe has two buttons and a display screen. With the probe inserted into the product, press the record button. The current temperature reading will appear on the display screen. This will also automatically record a data point in iMonnit, regardless of the heartbeat setting.

This reading will be wirelessly transmitted to your gateway, which will then transmit that data to iMonnit on the next gateway heartbeat. Clean the probe using sanitizer and a dry rag so it is ready for the next use.



Figure 8

Button functions:

Display Temperature Reading: Press and release the display button. When the display first comes up it will display the current temperature. Pressing the display button again toggle the display between current and last reported temperature readings.

Record Single Temperature Reading: Press and release the record button.

Start Record Session: Hold down the record button for 3+ seconds. Session will end when a user configured amount of time has lapsed, a user configured temperature threshold has been met, or record button is held for three seconds while a record session is active.

Stop Observation Mode: Hold down the record button for 3+ seconds while in an active observation.

Turn Display Off: Hold the display button down for 3+ seconds to turn the display off.

Change Units (C/F): Hold the display button then press/release the record button. Each time Record is pressed units will toggle.

Calibrate (Ice Bath): Hold Display and Record buttons for 5 seconds then release. If the sensor is reading between -10°C (-14°F) and $+10^{\circ}\text{C}$ (50°F), the Food Probe will calibrate to $0^{\circ}\text{C}/32^{\circ}\text{F}$. Otherwise an error will appear.

Reset Sensor: Hold Display and Record buttons for 10+ seconds.

Food Probe Specialty Feature Overview: Intelligent Measurement Session

Your Food Probe features an “Intelligent Measurement Session” (Record Session) function that utilizes the device’s data reporting capabilities to help perfect and standardize recipes. Intelligent Measurement Sessions track crucial kitchen variables such as temperature-rise events or cool-down sequences and alert users.

The data generated from these food preparation events helps identify the correct “resting” temperature for items like roasted or smoked meats before carving and serving.

Food probe users can initiate and cancel an Intelligent Measurement Session on their device. Sessions will automatically end when the configurable timeout or temperature threshold is reached. Ideal for large commercial kitchens, users may choose to be alerted when the food reaches a certain temperature.



Figure 9

VI. SENSOR OVERVIEW

Select Sensors from the main navigation menu on iMonnit to access the sensor overview page and begin adjusting your PoE Sensors.

MENU SYSTEM

- Details** - Displays a graph of recent sensor data
- History** - List of past sensor readings
- Actions** - List of all actions attached to this sensor
- Settings** - Editable configurations and features for your sensor
- Calibrate** - Used to calibrate your sensor
- Scale** - Change the scale of readings for your sensor

Directly under the tab bar is an overview of your sensor. This allows you to see the signal strength of the selected sensor. A colored dot in the left corner of the sensor icon denotes its status:

- **Green** indicates the sensor is checking in and is within user-defined safe parameters.
- **Red** indicates the sensor has met or exceeded a user-defined threshold or triggered event.
- **Gray** indicates that no sensor readings are being recorded, rendering the sensor inactive.
- **Yellow** indicates that the sensor reading is out of date, possibly due to a missed heartbeat check-in.

Details View

The Details View will be the first page you see upon selecting which sensor you would like to modify. See Figure 10.

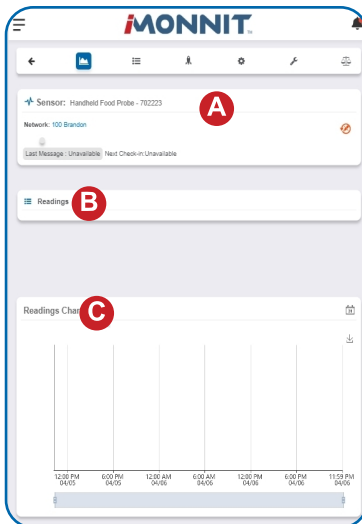


Figure 10

A. The sensor overview section will be above every page. This will consistently display the present reading, signal strength, battery level, and status.

B. The Recent Readings section below the chart shows your most recent data received by the sensor.

C. This graph charts how the sensor fluctuates throughout a set date range. To change the date range displayed in the graph, navigate up to the top of the Readings Chart section on the right-hand corner to change the from and/or to date.

Readings View

Selecting the **Readings Tab** within the tab bar allows you to view the sensor's data history as time stamped data.

- On the far right of the Sensor History Data is a cloud icon. () Selecting this icon will export an Excel file for your sensor into your download folder.

Note: Make sure you have the date range for the data you need input in the "From" and "To" text boxes. This will be the previous day by default. Only the first 2,500 entries in the selected date range will be exported.

The data file will have the following fields:

MessageID: Unique identifier of the message in our database.

Sensor ID: If multiple sensors are exported, you can distinguish between the sensors using this number — even if the names are the same.

Sensor Name: The name you have given the sensor.

Date: The date the message was transmitted from the sensor.

Value: Data presented with transformations applied, but without additional labels.

Formatted Value: Data transformed and presented as it is shown in the monitoring portal.

Battery: Estimated life of the battery.

Raw Data: Raw data as it is stored from the sensor.

Sensor State: Binary field represented as an integer containing information about the state of the sensor when the message was transmitted. (See "Sensor State Explained" below).

Gateway ID: The Identifier of the gateway that relayed the data from the sensor.

Alert Sent: Boolean indicating if this reading triggered a notification to be sent from the system.

Signal Strength: Strength of communication signal between the sensor and the gateway, shown as percentage value.

Voltage: Actual voltage measured at the sensor battery used to calculate battery percentage, similar to Received Signal you can use one or the other or both if they help you.

Sensor State

The integer presented here is generated from a single byte of stored data. A byte consists of 8 bits of data that we read as Boolean (True (1) / False (0)) fields. Using a temperature sensor as an example:

The Aware State is set True when the sensor exits a record session or when an error is detected.

(1) so the bit values are 00000010 and it is represented as 2.

Note: These two are the only bits that are typically observed outside of our testing procedures.

Settings View

To edit the operational settings for a sensor, choose the “**Sensor**” option in the main navigation menu then select the “**Settings**” tab to access the configuration page. See Figure 11.

A. Sensor Name is a unique name you give the probe to easily identify it in a list and in any notifications.

B. The Heartbeat Interval is how often the probe communicates with the gateway. Example: a temperature reading is taken for example at one hour and the heartbeat is set to two hours. That reading will not appear in iMonnit until the two hour mark as the probe communicates to the gateway and the gateway reports to iMonnit. However, if you take a reading and press the record button, data will automatically be sent and recorded in iMonnit.

C. Observation Mode Heartbeat Interval is the time in minutes that the device records and sends a temperature reading to the gateway while in Observation Mode.

D. Observation Mode Minimum Temp Threshold is the lowest allowable temperature the probe should record while in a Observation Mode. Readings below this value will cause the sensor to exit the session.

E. Observation Mode Maximum Temp Threshold is the highest allowable temperature the probe should record while in Observation Mode. Readings above this value will cause the sensor to exit the session.

F. Observation Mode Time Threshold is the maximum amount of time the probe is in Observation Mode before the device ends the session and goes to sleep.

G. LCD Display Timeout is the time in seconds when the LCD Screen will go to sleep if there is no activity.

H. In small networks (less than 6 sensors), the probe can be set to **synchronize** its communication with other devices on the network. When this setting is off sensors randomize their communications therefore maximizing communication robustness. Turning this on will synchronize the communication of the probe with other devices.

I. Failed transmissions before link mode is the number of transmissions the probe sends without response from a gateway before it goes to battery saving link mode. In link mode, a lower number will allow the probe to find gateways with fewer missed readings. Higher numbers will give the probe a better chance at remaining with its current gateway in a noisy RF environment. Setting this to zero will cause the probe to try and connect with the gateway it is currently communicating with and will not try to re-scan. We suggest leaving this at its default setting.

The default heartbeat interval is 120 minutes or two hours. It is recommended that you do not lower your heartbeat level too much because it will drain the batteries.

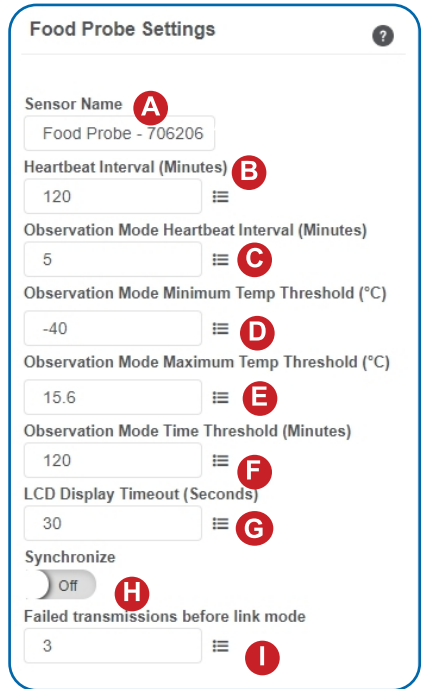


Figure 11

Note: Pressing the record button will trigger readings on demand.

Finish by selecting the **Save** button.

Note: Be sure to select the “Save” button anytime you make a change to any of the sensor parameters. All changes made to the sensor settings will be downloaded to the sensor on the next sensor heartbeat (check-in). Once a change has been made and saved, you will not be able to edit that sensor’s configuration again until it has downloaded the new setting.

Calibrate View

If a probe has readings that need to be reset, the “Calibrate” tab will be available for selection in the tab bar. See Figure 12.

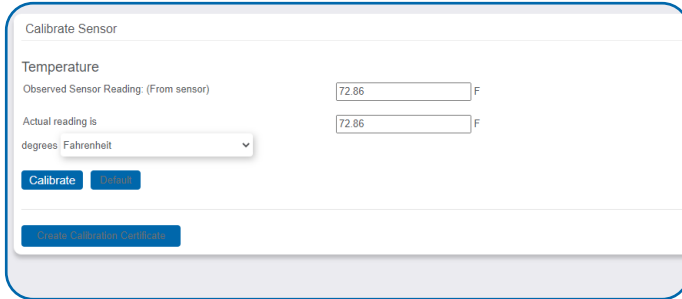


Figure 12

To calibrate a probe, you will want to ensure that the environment of the sensor and other calibration device is stable. Note the “Expected Next Check-in” time for the probe and take a reading from your calibration device a few minutes prior to the probe’s next check-in.

Enter the actual (accurate) reading from the calibration device into the text field. If you need to change the unit of measurement you can do that here.

Press **Calibrate**.

To ensure that the calibration command is received prior to the sensors next check-in, press the utility button on the back of the gateway, once, to force communication.

After pressing the **Calibrate** button and choosing the gateway button, the server will send the command to calibrate the probe to the gateway. When the probe checks-in, it will send the per-calibration reading to the gateway, then receive the calibration command and update its configuration. When the process is completed, it will send a “Calibration Successful” message. The server will display the probe’s last per-calibrated reading for this check-in, then all future readings from the sensor will be based on the new calibration setting.

It is important to note that after calibrating the probe, the probe reading returned to the server is based on pre-calibration settings. The new calibration settings will take effect on the following message.

Note: If you would like to send the changes to the probe right away, press the record button. This forces the communication from the probe to the gateway and this message to make a change from the gateway back to the probe.

Creating a Calibration Certificate

Creating a calibration certificate will mask the calibration tab from those who should not have permissions to adjust these settings. Permissions for self-certifying a calibration must be enabled in user permissions.

Directly below the calibrate button is the selection to **Create Calibration Certificate**. See Figure 13.

The screenshot shows a form titled "Calibrate Certification Form" with the following fields and callouts:

- A:** "Calibration Facility" dropdown menu with "CalLabCo" selected.
- B:** "Certificate Valid Until" date field with "08/26/2019" entered.
- C:** "Certification Type" dropdown menu.
- D:** "Heartbeat Interval Reset" dropdown menu with "No Change" selected.
- E:** "Save" button.

Other fields include "Date Certified" (08/26/2019), "Calibration Number", and "Calibration Type".

- A.** The **Calibration Facility Field** will be filled. Select the drop-down menu to change your facility.
- B.** The **"Certificate Valid Until"** field must be set one day in the future after the date contained in the "Date Certified" field.
- C.** **"Calibration Number"** and **"Calibration Type"** are unique values to your certificate.
- D.** If necessary, you can reset the heartbeat interval here to 10 minutes, 60 minutes, or 120 minutes. By default, this will be set to no change.
- E.** Choose the **"Save"** button before moving on.

Figure 13

When the new certificate is accepted, the Calibration tab will change to a Certificate tab.

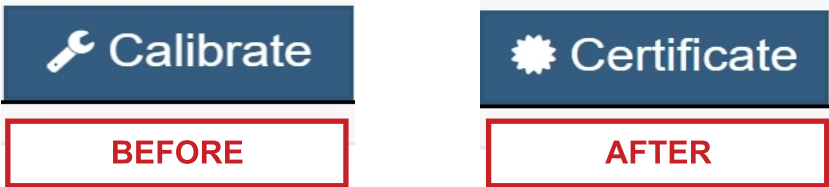


Figure 14

You will still be able to edit the certificate by choosing the Certificate Tab and navigating down to "Edit Calibration Certificate."

The tab will revert back to "Calibrate" after the period for the certificate ends.

Note: Swapping out / switching of probes will invalidate calibration certificate.

Scale View

The scale option will also be available in the tab bar. To change the temperature unit of measurement from Fahrenheit to Celsius or vice versa, select the Scale tab. See Figure 15.

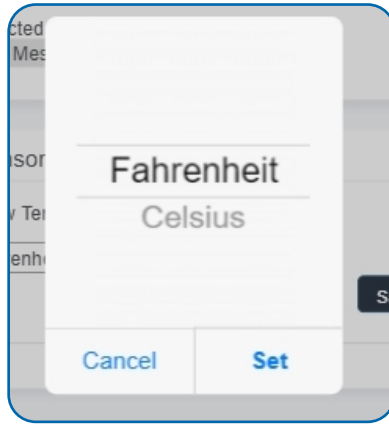


Figure 15

Choose the text box to trigger a pop-up window allowing you to change the scale. Select the scale you prefer and push **Set**.

Press the **Save** button to complete your adjustment.

Changing the temperature scale in the software only changes the value displayed (see screenshot above).

To change temperature scales on your device, please see page 7.

VII. ACTIONS OVERVIEW

Notifications for a the probe can be created, deleted, and edited by selecting the “Actions” tab in the tab bar. See Figure 16.

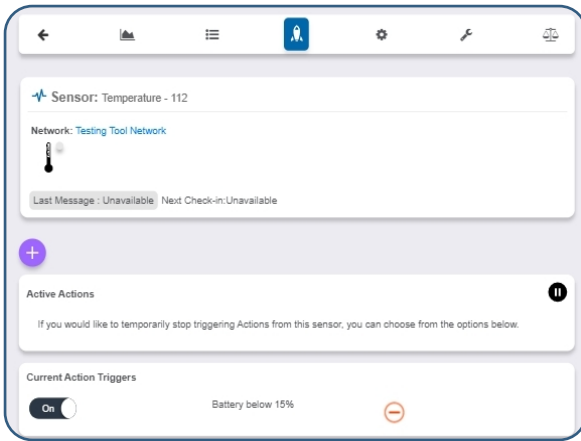


Figure 16

You can toggle the Action Trigger on or off by selecting the switch under Current Action Triggers.

CREATING AN ACTION

Actions are triggers or alarms set to let you know when a sensor reading identifies that immediate attention is needed. Types of actions include sensor readings, battery level, device inactivity, and scheduled data. Any one of these can be set to send a notification or trigger an action in the system.

- Select “Actions” in the main navigation menu. See Figure 17.



Figure 17

- A list of previously created actions will display on the screen. From here, you have the ability to filter, refresh, and add new actions to the list.

Note: If this is your first time adding an action, the screen will be blank.

- From the Actions page, tap “Add Action” in the left hand corner.

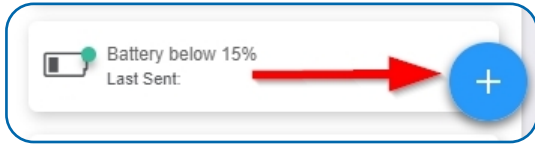


Figure 18

Step 1: What triggers your action?

- The drop-down menu will have the following options for Action Types: (See Figure 19)

Sensor Reading: Set actions based on activity or reading.

Battery Level: This is where you can set to be notified when the battery level drops below a percentage. 15% is the default setting.

Device Inactivity: Actions when the device doesn't communicate for an extended period of time.

Advanced: Actions based on advanced rules, such as comparing past data points with current ones.

Scheduled: These are actions that fire at a time set basis.

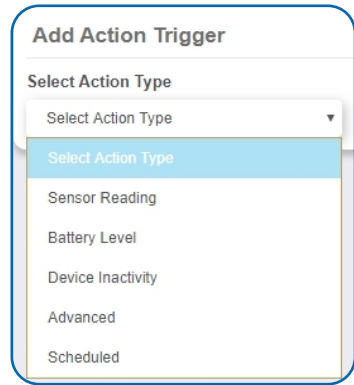


Figure 19

- Select **Sensor Reading** from the drop-down menu.
- A second drop-down menu will appear. From here, you will be able to see a list of the different type of sensors registered to your account. Choose **Temperature** in the drop down menu.
- Next, you will be asked to input the trigger settings. You have the option of setting this trigger for greater than or less than a temperature reading
- Press the “Save” button.

Sensors can have multiple event triggers created. See Figure 20.

Example: A temperature sensor used in a freezer. You may want to be notified if the temperature goes below 0° or above 30° Fahrenheit. You would create two events.

- **Action 1-** Trigger Set for temperatures LESS THAN 0°F.
- **Action 2 -** Trigger set for temperatures GREATER THAN 30° F.

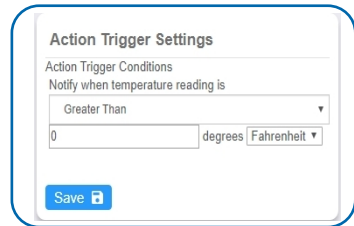


Figure 20

Step 2: Actions

- Press the **Add Action** button under the event information header and available action types are presented in a select list.
- Choose **Notification Action** from the notification list. See Figure 21.
 - A.** Configure the subject for the notification.
 - B.** Customize the message body for the notification.
 - C.** Save button commits any changes to message content fields.
 - D.** Recipient list identifies who will receive the notification. See Figure 22.
- Select the icon next to a user to specify how they will be notified.
- Choose if you want notifications sent immediately, when triggered, or if you want a delay before sending and press **Set**.
- A **green** icon indicates that the users that will receive the notifications.
- If a delay has been selected, the delay time will display beside the icon.

Figure 21

Figure 22

Select **System Action** from the Add Action list. See Figure 23.

- Scroll down to the System Action section.
- The Action to be done select list has the following options:
 - Acknowledge:** Automatically signals that you have been notified of an action. When an action has been triggered, alerts will continue processing until the action returns to a value that no longer triggers an action.
 - Full Reset:** Reset your trigger so it is armed for the next reading.
 - Activate:** Enable an action trigger.
 - Deactivate:** Disable an action trigger.

Figure 23

Step 3: Action Name and Devices

- By default, the sensor(s) will not be assigned to the action conditions you've just set. To assign a sensor, find the device(s) you want to designate for this action and select. Selected sensor boxes will turn green when activated. Choose the sensor box again to unassign the sensor from the action. See Figure 24.
- Continue toggling the sensor(s) corresponding to this new action until you are satisfied with your selection. These can be adjusted later by returning to this page.
- Press the "Check-mark button" to complete the process.

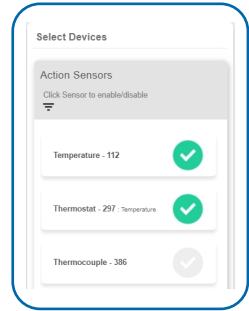


Figure 24

SUPPORT

For technical support and troubleshooting tips please visit our support library online at monnit.com/support/. If you are unable to solve your issue using our online support, email Monnit support at support@monnit.com with your contact information and a description of the problem, and a support representative will call you within one business day.

For error reporting, please email a full description of the error to support@monnit.com.

WARRANTY INFORMATION

(a) Monnit warrants that Monnit-branded products (Products) will be free from defects in materials and workmanship for a period of one (1) year from the date of delivery with respect to hardware and will materially conform to their published specifications for a period of one (1) year with respect to software. Monnit may resell sensors manufactured by other entities and are subject to their individual warranties; Monnit will not enhance or extend those warranties. Monnit does not warrant that the software or any portion thereof is error free. Monnit will have no warranty obligation with respect to Products subjected to abuse, misuse, negligence or accident. If any software or firmware incorporated in any Product fails to conform to the warranty set forth in this Section, Monnit shall provide a bug fix or software patch correcting such non-conformance within a reasonable period after Monnit receives from Customer (i) notice of such non-conformance, and (ii) sufficient information regarding such non-conformance so as to permit Monnit to create such bug fix or software patch. If any hardware component of any Product fails to conform to the warranty in this Section, Monnit shall, at its option, refund the purchase price less any discounts, or repair or replace nonconforming Products with conforming Products or Products having substantially identical form, fit, and function and deliver the repaired or replacement Product to a carrier for land shipment to customer within a reasonable period after Monnit receives from Customer (i) notice of such non-conformance, and (ii) the non-conforming Product provided; however, if, in its opinion, Monnit cannot repair or replace on commercially reasonable terms it may choose to refund the purchase price. Repair parts and replacement Products may be reconditioned or new. All replacement Products and parts become the property of Monnit. Repaired or replacement Products shall be subject to the warranty, if any remains, originally applicable to the product repaired or replaced. Customer must obtain from Monnit a Return Material Authorization Number (RMA) prior to returning any Products to Monnit. Products returned under this Warranty must be unmodified.

Customer may return all Products for repair or replacement due to defects in original materials and workmanship if Monnit is notified within one year of customer's receipt of the product. Monnit reserves the right to repair or replace Products at its own and complete discretion. Customer must obtain from Monnit a Return Material Authorization Number (RMA) prior to returning any Products to Monnit.

Products returned under this Warranty must be unmodified and in original packaging. Monnit reserves the right to refuse warranty repairs or replacements for any Products that are damaged or not in original form. For Products outside the one year warranty period repair services are available at Monnit at standard labor rates for a period of one year from the Customer's original date of receipt.

(b) As a condition to Monnit's obligations under the immediately preceding paragraphs, Customer shall return Products to be examined and replaced to Monnit's facilities, in shipping cartons which clearly display a valid RMA number provided by Monnit. Customer acknowledges that replacement Products may be repaired, refurbished or tested and found to be complying. Customer shall bear the risk of loss for such return shipment and shall bear all shipping costs. Monnit shall deliver replacements for Products determined by Monnit to be properly returned, shall bear the risk of loss and such costs of shipment of repaired Products or replacements, and shall credit Customer's reasonable costs of shipping such returned Products against future purchases.

(c) Monnit's sole obligation under the warranty described or set forth here shall be to repair or replace non-conforming products as set forth in the immediately preceding paragraph, or to refund the documented purchase price for non-conforming Products to Customer. Monnit's warranty obligations shall run solely to Customer, and Monnit shall have no obligation to customers of Customer or other users of the Products.

Limitation of Warranty and Remedies

THE WARRANTY SET FORTH HEREIN IS THE ONLY WARRANTY APPLICABLE TO PRODUCTS PURCHASED BY CUSTOMER. ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY DISCLAIMED. MONNIT'S LIABILITY WHETHER IN CONTRACT, IN TORT, UNDER ANY WARRANTY, IN NEGLIGENCE OR OTHERWISE SHALL NOT EXCEED THE PURCHASE PRICE PAID BY CUSTOMER FOR THE PRODUCT. UNDER NO CIRCUMSTANCES SHALL MONNIT BE LIABLE FOR SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES. THE PRICE STATED FOR THE PRODUCTS IS A CONSIDERATION IN LIMITING MONNIT'S LIABILITY. NO ACTION, REGARDLESS OF FORM, ARISING OUT OF THIS AGREEMENT MAY BE BROUGHT BY CUSTOMER MORE THAN ONE YEAR AFTER THE CAUSE OF ACTION HAS ACCRUED.

IN ADDITION TO THE WARRANTIES DISCLAIMED ABOVE, MONNIT SPECIFICALLY DISCLAIMS ANY AND ALL LIABILITY AND WARRANTIES, IMPLIED OR EXPRESSED, FOR USES REQUIRING FAIL-SAFE PERFORMANCE IN WHICH FAILURE OF A PRODUCT COULD LEAD TO DEATH, SERIOUS PERSONAL INJURY, OR SEVERE PHYSICAL OR ENVIRONMENTAL DAMAGE SUCH AS, BUT NOT LIMITED TO, LIFE SUPPORT OR MEDICAL DEVICES OR NUCLEAR APPLICATIONS. PRODUCTS ARE NOT DESIGNED FOR AND SHOULD NOT BE USED IN ANY OF THESE APPLICATIONS.

CERTIFICATIONS

United States FCC

This equipment has been tested and found to comply with the limits for a Class B digital devices, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Warning: *Changes or modifications not expressly approved by Monnit could void the user's authority to operate the equipment.*

RF Exposure



WARNING: To satisfy FCC RF exposure requirements for mobile transmitting devices, the antenna used for this transmitter must not be co-located in conjunction with any antenna or transmitter.

Monnit and ALTA Wireless Sensors:

All ALTA Wireless Sensors ALTA devices have been designed to operate with an approved antenna listed below, and having a maximum gain of 14 dBi. Antennas having a gain greater than 14 dBi are strictly prohibited for use with this device. The required antenna impedance is 50 ohms. **Contain FCC ID: ZTL-G2SC1. Approved Antennas**

- Xianzi XQZ-900E (5 dBi Dipole Omnidirectional)
- HyperLink HG908U-PRO (8 dBi Fiberglass Omnidirectional)
- HyperLink HG8909P (9 dBd Flat Panel Antenna)
- HyperLink HG914YE-NF (14 dBd Yagi)
- Specialized Manufacturing MC-ANT-20/4.0C (1 dBi 4" whip)

Canada (IC)

English

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.

The radio transmitters (IC: 9794A-RFSC1, IC: 9794A-G2SC1, IC: 4160a-CNN0301, IC: 5131A-CE910DUAL, IC: 5131A-HE910NA, IC: 5131A-GE910 and IC: 8595A2AGQN4NNN) have been approved by Industry Canada to operate with the antenna types listed on previous page with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

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.

French

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.É) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Le présent émetteurs radio (IC: 9794A-RFSC1, IC: 9794A-G2SC1, IC: 4160a-CNN0301, IC: 5131A-CE910DUAL, IC: 5131A-HE910NA, IC: 5131A-GE910 et IC: 8595A2AGQN4NNN) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne figurant sur la page précédente et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

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.

SAFETY RECOMMENDATIONS - READ CAREFULLY

Be sure the use of this product is allowed in the country and in the environment required. The use of this product may be dangerous and has to be avoided in the following areas:

- *Where it can interfere with other electronic devices in environments such as hospitals, airports, aircraft, etc.*
- *Where there is risk of explosion such as gasoline stations, oil refineries, etc.*

It is responsibility of the user to enforce the country regulation and the specific environment regulation.

Do not disassemble the product; any mark of tampering will compromise the warranty validity. We recommend following the instructions of this user guide for correct setup and use of the product.

Please handle the product with care, avoiding any dropping and contact with the internal circuit board as electrostatic discharges may damage the product itself. The same precautions should be taken if manually inserting a SIM card, checking carefully the instruction for its use. Do not insert or remove the SIM when the product is in power saving mode.

Every device has to be equipped with a proper antenna with specific characteristics. The antenna has to be installed with care in order to avoid any interference with other electronic devices and has to guarantee a minimum distance from the body (23 cm). In case this requirement cannot be satisfied, the system integrator has to assess the final product against the SAR regulation.

The European Community provides some Directives for the electronic equipment introduced on the market. All the relevant information's is available on the European Community website:

<http://ec.europa.eu/enterprise/sectors/rtte/documents/>

The text of the Directive 99/05 regarding telecommunication equipment is available, while the applicable Directives (Low Voltage and EMC) are available at:
<http://ec.europa.eu/enterprise/sectors/electrical>

Additional Information and Support

For additional information or more detailed instructions on how to use your Monnit Sensors or the iMonnit Online System, please visit us on the web at <https://www.monnit.com/support/documentation>.



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