



# Wireless Control User's Guide

## Inside the Box

You should find the following items in the box:

- Monnit Wireless Control Unit
- Antenna

## **IMPORTANT!**

Disconnect all power to the control unit and the device to be controlled, before connecting the control relay wires.

## Monnit Wireless Control Quick Start

- Create an iMonnit user account and assign a wireless gateway and sensors.
- Assign the wireless control device to the sensor network.
- Connect control relay's to devices you wish to control.
- Plug the control device's power supply into a power outlet.
- Pair the control relays with wireless sensor's on the same sensor network.
- Set sensor conditions that will activate the relays.

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## I. ABOUT THE WIRELESS CONTROL UNIT

The Monnit® control unit has two separate relays that react in response to either the iMonnit®.com web portal or a wireless sensor on the network. The relays are capable of automatically controlling motors, equipment or electrical devices. Monnit control is currently available in 10-amp or 30-amp versions (10-amp unit has two 10-amp relays and 30-amp unit has two 30-amp relays).

Four LED indicators let the user know if the device is powered on, communicating with the online system and the status of each relay.

Each of the units two relays can be automatically controlled through the iMonnit software by pairing a relay directly with a sensor (which will use the sensor's aware state to control the relay) or by adding a control relay action in any notification setup in the system.

The user can also manually turn a relay on or off through the iMonnit software. Manual changes can also be temporary based on a set duration (ex. activate the relay for 10 minutes then return to the default state).

Example Use: If a water sensor detects water at a certain level in a sump pit, the relay will switch ON, activating the pump. When water is no longer detected, the relay will switch OFF, deactivating the pump motor.

### MONNIT WIRELESS CONTROL UNIT FEATURES

- Allows for automated control.
- 10-amp or 30-amp units available.
- Two separate relays per unit.
- Can pair with two Monnit wireless sensors to activate upon detection of set conditions.
- Can be triggered manually through online monitoring interface.
- AC powered, always on for immediate response from the Monnit wireless sensor network.

### EXAMPLE APPLICATIONS

- Facilities / Building Operations
- Automated Systems
- Smart Buildings
- Manufacturing Processes
- Machine Control
- Lighting Control
- Sump and Water Evacuation
- Agriculture and Greenhouses

**Note:** Monnit control requires a Monnit wireless gateway to receive commands from wireless sensors as all commands are processed through the iMonnit online software.

## II. WIRELESS CONTROL UNIT SECURITY

Security is paramount for the Wireless Control Unit when it comes to managing your environment and equipment. Great care and attention to detail has been taken to keep the exchange of data secure on a gateway and in device communications.

### 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. USING THE WIRELESS CONTROL UNIT

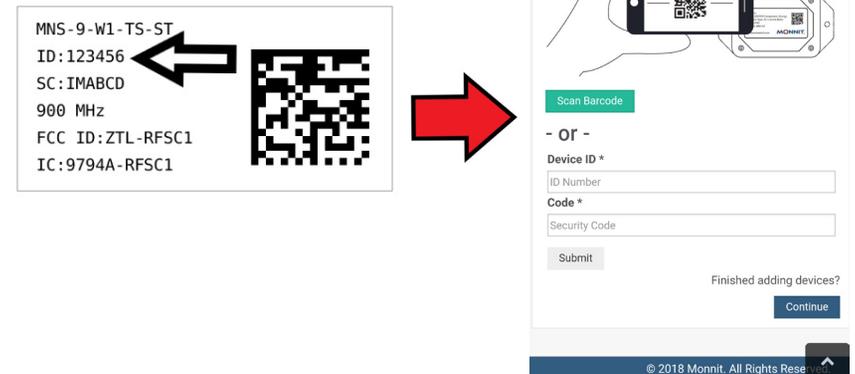
If this is your first time using the iMonnit online portal, you will need to create a new account. If you have already created an account, start by logging in. For instructions on how to register for an iMonnit account, please consult the iMonnit User Guide viewable at [monnit.com/support/documentation](http://monnit.com/support/documentation).

### REGISTERING THE WIRELESS CONTROL UNIT

You will need to enter the **Device ID** and the **Security Code** from your Wireless Control Unit in the corresponding text boxes. Use the camera on your smartphone to scan the QR code on your control unit. If you do not have a camera on your phone, or you are accessing the online portal through a desktop computer, 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 (SC)** on your device. A security code will be all letters, no numbers. It can also be found on the barcode label of your gateway.

When completed, select the **"Submit"** button.



Power cycle your gateway to ensure that the gateway will recognize the control unit. Once the control unit has been added to your network and before connecting the relay wires to any equipment, power on the control unit. Check that the bottom two LED indicators are illuminated green.

## WIRELESS CONTROL LED INDICATORS

The LED indicator lights on the Wireless Control Unit are the quickest way to see if your unit is functioning properly.

### Relay 1 and 2

- A solid green light indicates the relay is "on" (closed.)
- No light is a signal that the relay is "off" (open.)

### Radio

- Solid green indicates that the radio is active.
- A flashing light signals radio communication with a wireless gateway or sensor. This light will flash on every poll, corresponding to the set poll rate saved to the control unit in your iMonnit settings.

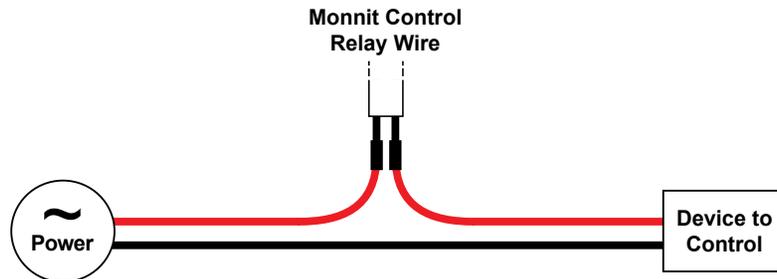
### Power

A solid green light indicates the unit is receiving power.

## CONNECTING THE RELAYS

The relay acts as a switch on the line for your power source. The relays are by default NORMALLY OPEN, so there is no connection (lights for the relays will be off to indicate this). See the edit page in iMonnit and adjust your relay settings if you wish for the default state to be NORMALLY CLOSED.

The relay is just allowing the current to pass through, so it will be installed inline on the power wire. It is not connected to power and ground.



Select **Sensors** from the main navigation menu to access the sensor overview page and begin making adjustments to your Wireless Control Unit. To filter your results, choose the funnel icon and pick "Dual Control" from the dropdown menu.

## IMONNIT MENU SYSTEM

**Details** - Displays a graph of recent control unit data.

**History** - List of all past heartbeats and readings.

**Events** - List of all events attached to this control unit.

**Settings** - Editable levels for your control unit.

**Control** - List of relay commands for the control unit to send.

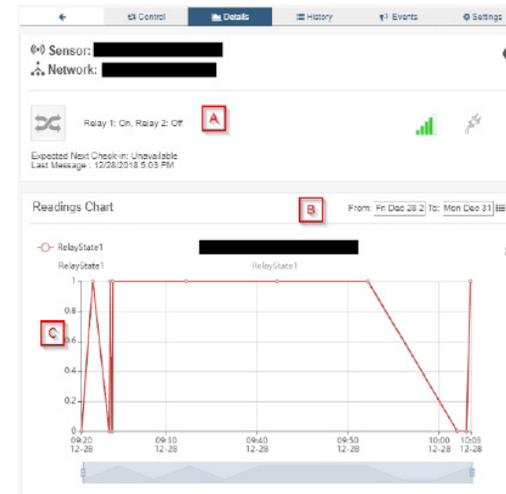
Directly under the tab bar is an overview of your control unit. This allows you to see the signal strength and current relay commands of the selected unit.

-  The control unit is checking in and within user defined safe parameters.
-  The control unit has met or exceeded a user defined threshold or triggered event.
-  No control unit readings are being recorded, rendering the unit inactive.

**Note:** The data shown on the chart, event, history, and export file is based on the date range indicated on the upper right side of the sensor detail information. To change the date range, click the inside of the date box.

### Details View

The Details View will be the first page you see upon selecting the control unit.



**A.** The control unit overview section will be above every page. This will consistently display the current relay commands, signal strength, and status.

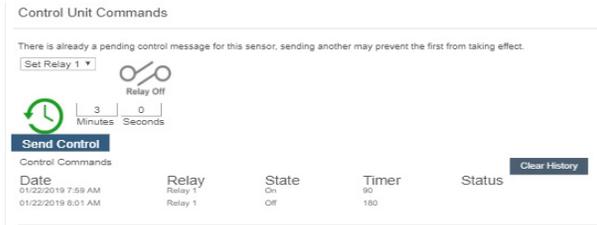
**B.** Select the start and end date for data you wish to see displayed in

the chart by choosing the  icon beside the date selection boxes.

**C.** This graph charts how the sensor fluctuates throughout a set date range.

## Control View

Control devices have two relays per device that are controlled separately. You can turn a relay on, off or toggle the state. You can also set a duration by clicking on the timer icon. This will perform the selected toggle (on/off/toggle) for a set duration, then change back. To test the functionality of the relays when connected to equipment, go into the iMonnit portal, navigate to the “Control” tab:



Use the drop down to pick Relay 1 or 2 and select the relay icon to the right to toggle a state:

Turn the relay ON, (close it). The icon will turn green.

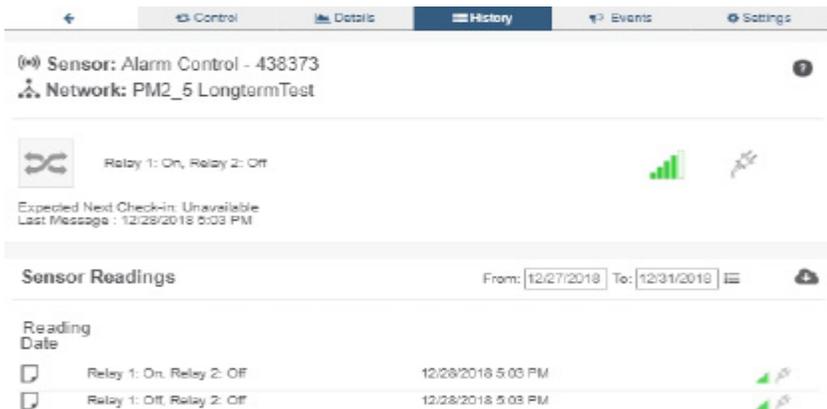
Turn the relay OFF (open it). The icon will turn gray. This is the default setting.

Choose the clock to set a duration time for the selected action to affect the relay, after which it will switch back. Note that time can be set in minutes but will display in the below table in seconds. If you want to simply switch the relay without a set time to switch back, leave the field empty. Press the “Send Control” button when finished.

Once the Send Control command is sent, it will take the combined time of the gateway poll interval OR heartbeat, if poll interval is not set plus the poll interval on the control unit to affect the relay. To speed up the process, force the gateway to communicate with the server and/or lower the poll rates.

## History View

Selecting the “History” tab within the tab bar allows you to view the Wireless Control Unit’s data history as time stamped data. This is a good way to verify your data is being received.



- 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 most recent week 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.

**SensorID:** The Wireless Control Unit will be treated like a sensor in this excel export. The SensorID is the numerical identifier for the device.

**Sensor Name:** The name you have given the Wireless Control Unit.

**Date:** The date the data was transmitted.

**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 remaining of the battery. Because the Wireless Control Unit has no battery, this will always be 100.

**Raw Data:** Raw data as it is stored from the control unit.

**Sensor State:** Binary field represented as an integer containing information about the state or the control unit when the message was transmitted. (See “State” below).

**Gateway ID:** The Identifier of the gateway that relayed the data from the control unit.

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

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

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

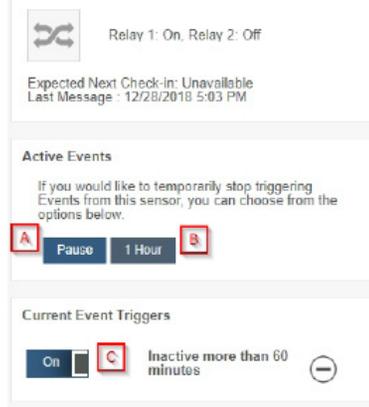
## State

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.

Field	Length	Description
Test Active	1 bit LSB	Test state is active (1) or inactive (0)
Aware State	1 bit	Aware state is active (1) or inactive (0)
Sensor Disable	1 bit	Sensor is disable (communication still happens)
RSVD	1 bit	Currently not used
Sensor Specific	1 bit	
Sensor Specific	1 bit	
Sensor Specific	1 bit	
Sensor Specific	1 bit MSB	

## Events View

From the Events tab, you can Pause or delay current triggers for the Wireless Control Unit by one hour.



**A.** Pause events by selecting this button. The chosen event will be paused indefinitely. It can be ended by picking the “Unpause” button.

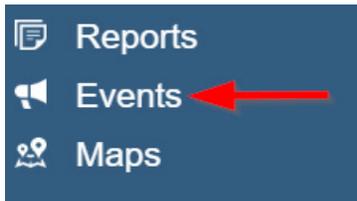
**B.** Put events on a one-hour time delay by choosing the “1 Hour” button. It can be ended by selecting the “Unpause” button.

**C.** Alternatively, you can toggle an event off and on by dragging the switch left to right.

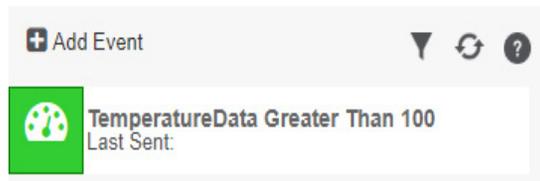
## Creating an Event

Events are triggers or alarms set to let you know when a sensor reading identifies that immediate attention is needed. Types of events 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. This guide will walk you through creating two types of events. First a sensor reading notification for a temperature sensor, then an inactivity notification configured for all sensors.

1. Select Events in the main navigation menu.

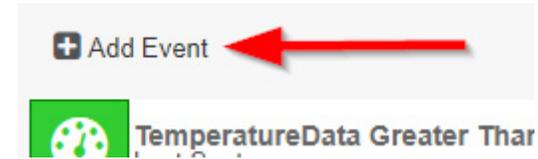


2. A list of previously created events will display on the screen. From here, you have the ability to filter, refresh, and add new events to the list.



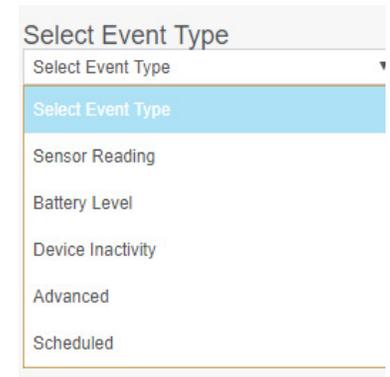
**Note:** If this is your first time adding an event, the screen will be blank.

3. From the Events page, tap “Add Event” in the left hand corner.



4. The dropdown menu will have the following options for Event Types:

- **Sensor Reading:** Set alerts based on sensor 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:** Alerts when the device doesn't communicate for an extended period of time.
- **Advanced:** Alerts based on advanced rules, such as comparing past data points with current ones.
- **Scheduled:** These are notifications that fire at a time set basis.

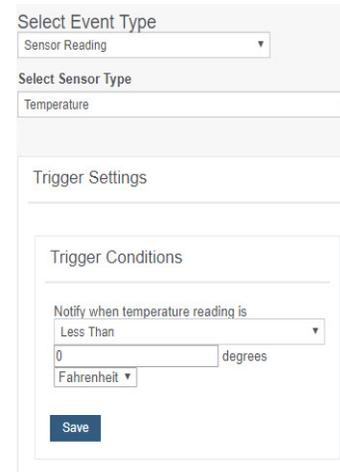


5. Select **Sensor Reading** from the dropdown menu.

6. A second dropdown 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 dropdown menu.

7. 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

8. Press the “Save” button.



If you don't have a temperature sensor, the option in this example won't be available, select any variable output sensor and follow along.

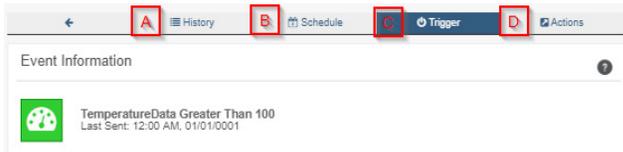
Variable output sensors can have multiple event triggers created.

**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.

- **Event 1** - Trigger Set for temperatures LESS THAN 0°F.

- **Event 2** - Trigger set for temperatures GREATER THAN 30° F.

9. The Event Information page has a series of tabs across the top.



- A. History:** A table of all past alert notifications for this specific event.
- B. Schedule:** Here you can schedule the event only to be active at certain times or certain days.
- C. Trigger:** This is where you can review your trigger settings.
- D. Actions:** Where you set the action you want to happen when an alert state is triggered.

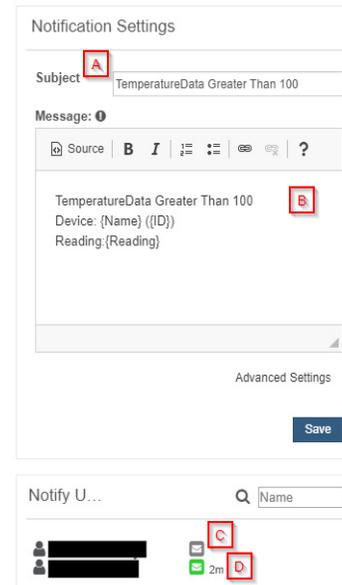
10. Choose the **Trigger** tab.

11. The **Trigger Sensors** section sits below “**Trigger Conditions.**” If you have multiple sensors for the same type (**Example:** five Wireless Control Units), this is where they will be listed. There should be at least one sensor in this section.



- 12. By default, the sensor(s) will not be assigned to the event conditions you've just set. To assign a sensor, find the device(s) you want to designate for this event and select. Selected sensor boxes will turn green when activated. Choose the sensor box again to unassign the sensor from the event.
- 13. Continue toggling the sensor(s) corresponding to this new event until you are satisfied with your selection. These can be adjusted later by returning to this page.
- 14. Press the “Save” button.
- 15. Select the Actions tab.
- 16. Press the Add Action button under the Event Information header and available action types are presented in a select list.
  - **Notification Action:** Specify account users to receive notifications when this event triggers.
  - **System Action:** Assign actions for the system to process when this event triggers.

17. Choose **Notification Action** from the notification list.



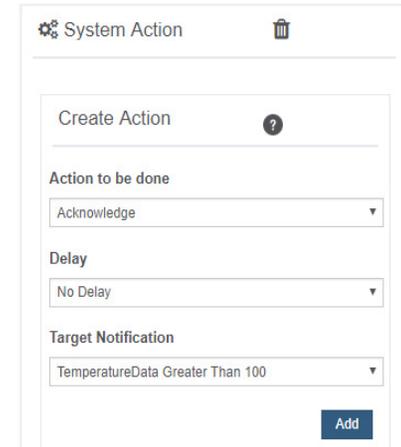
- A.** Configure the subject for the notification.
- B.** Customize the message body for the notification
- C.** Save button commits any changes to message content fields.
- D.** Recipient list identifies who will receive the notification.
  - Select the icon next to a user to configure how they will be notified
  - Choose if you want notifications sent immediately when triggered or if you want a delay before it is sent and press **Set**.
  - A **green** icon indicates the users that will not receive the notifications.
  - If a delay has been selected, the delay time will display beside the icon.

18. Select System Action from the select list under the Event Information header.

19. Scroll down to the System Action section.

20. The Action to be Done select list has the following options.

- **Acknowledge:** Automatically signal that you have been notified of an event and take action. When an event has been triggered, actions will continue processing until the event returns to a value that no longer triggers an event.
- **Full Reset:** Reset your trigger so it is armed for the next reading.
- **Activate:** Enable an event trigger.
- **Deactivate:** Disable an event trigger.



### Settings View

To edit the operational settings for the Wireless Control Unit, choose the “**Settings**” tab to access the configuration page.

## Dual Control - 10 Amp Settings

**A. Sensor Name** is a unique name you give the sensor to easily identify the control unit in a list and in any notifications.

**B. The Heartbeat Interval** is how often the sensor communicates with the gateway if no activity is recorded.

**C. The Sensor is On** switch can be toggled for All Day or Between a set time range.

**D. The Poll Interval** setting only applies if you are using Monnit Control or Monnit Local Alert. Here's how it works: to conserve cellular data, your gateway has a set heartbeat (meaning it only exchanges data with the iMonnit server once every fifteen minutes by default). If you are using Monnit Control or Monnit Local Alert, you may want to control

equipment or receive local alerts more frequently. If you were to increase your gateway heartbeat, you would increase your data usage substantially.

Setting a poll rate allows your control unit to check for priority incoming messages more frequently—while using a fraction of the data of a regular message exchange. Your control unit asks the iMonnit server if there are any priority incoming messages, and if there are, they are exchanged immediately. If not, no messages are exchanged until your gateway has its next regular heartbeat.

**E. Failed Transmissions Before Link Mode** this is the number of times unsuccessful communication between the Wireless Control Unit and the gateway can be attempted before the unit enters link mode. Link Mode is when the control unit starts going channel by channel trying to send a message to the gateway. This scan-cycle takes about 30 seconds. If all available channels have been tried and there is still no connection, no data will be sent for two hours.

**F. Relay Title** is where you can assign a name to the relay, just like the Sensor Name field above. The default name will be Relay 1 or Relay 2.

**G. Default State** is where you assign the open or closed state as the default setting for the relay so it can be adjusted in the Control tab. **“Off” is open. “On” is closed.** The control device will listen for messages from the iMonnit software via a Monnit wireless gateway, if a sensor reading meets the “Aware” state conditions, the control relay will automatically switch to the non-default state. When the sensor reports a reading outside of the “Aware” state conditions, the relay will switch back to its default state.

**H. Paired Sensor ID** where you enter the device ID for your sensor to assign it to that relay. Each of the units two relays can be paired with any Monnit wireless sensor (currently over 40 types) to activate the relay when the sensor detects user defined conditions (using the “Aware” state). To pair a relay with a wireless sensor, enter the sensor’s ID from its label.

For an explanation on sensors and how the aware state is set, refer to that sensor’s edit page in iMonnit.

**I. The Show** switch toggles whether Relay 2 is shown as an option in the Control View or not. The same fields are available here as in Relay 1 to pair Relay 2 with a sensor.

## Monnit Wireless Control Unit Specifications

Control Unit Relays	10-Amp Units	30-Amp Units
Initial Contact Resistance	Max. 100 mΩ	Max. 50 mΩ
Max Switching Power (resistive load)	2500VA 150W (NO) 1662VA 150W (NC)	8310VA (30A 277VAC)
Max Switching Voltage	250 VAC, 100 VDC (0.5A)	277 VAC
Max Switching Current	10A (AC), 5A (DC)	30A
Nominal Operating Power	360 mW	Approx 800 mW
Operate Time (at nominal voltage / 20°C)	Max 10 ms	Max 20 ms
Release Time (at nominal voltage / 20°C)	Max 10 ms	Max 10 ms
Max Operating Speed	20 times/min (at nominal switching capacity)	20 times/min (at nominal switching capacity)
Number of Relays	2 (individually controlled)	
Control Activation	- Automatic based on paired sensor - Manual through iMonnit online software	
Paired Sensor Relationship	1 sensor per relay (total: 2 sensors / device)	
<b>Power</b>		
Input Power	5.5 VDC @ 900 mA	
<b>Mechanical</b>		
Antenna	Connector: SMA Gain (dBi): 5.0	
Indicator Lights	Four LED indicators - Power - Radio (RF) communication - Relay 1 status (On/Off) - Relay 2 status (On/Off)	
Enclosure	ABS Plastic UL94V-0 flame rating	
Dimensions	5.5 x 3.355 x 1.25 in. (139.7 x 85.217 x 31.75 mm)	
Weight	8 ounces	
<b>Environmental</b>		
Operating Temperature	-40° to +85° C (-40° to +185° F)	
Certifications:	 900 MHz product; FCC ID: ZTL- RFSC1 and IC: 9794A-RFSC1. 868 and 433 MHz product tested and found to comply with: CISPR 22:2008-09 / EN 55022:2010 - Class B and ETSI EN 300 220-2 V2.4.1 (2012-05).	

## Warranty Information

(a) Monnit warrants that Monnit-branded 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 non-conforming 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 other antenna or transmitter.

### Monnit Wireless Control Contains:

#### FCC ID: ZTL-RFSC1

This device has been designed to operate with an approved antenna listed below, and having a maximum gain of 5.1 dBi. Antennas not included in this list or having a gain greater than 5.1 dBi are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that required for successful communication.

#### Approved Antennas

The following antennas are approved for use with Monnit devices.

- Hyperlink HG905RD-RSP (5.1 dBi Rubber Duck)
- Pulse W1063 (3.0 dBi Rubber Duck)
- ChangHong GSM-09 (2.0 dBi Rubber Duck)
- Specialized Manufacturing MC-ANT-20/4.0C (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 transmitter (IC: 9794A-RFSC1) has 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 licence-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.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Le présent émetteur radio (IC: 9794A-RFSC1) 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.

## Error Reporting, Troubleshooting and Support

For technical support and troubleshooting tips please visit our support library online at [monnit.com/support/](https://monnit.com/support/). If you are unable to solve your issue using our online support, email Monnit support at [support@monnit.com](mailto: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](mailto:support@monnit.com).

## Additional Information and Support

For additional information or more detailed instructions on how to use your Monnit Wireless Sensors or the iMonnit Online System, please visit us on the web at [monnit.com/support/](https://monnit.com/support/).

For additional information or more detailed instructions on how to use your Monnit Wireless Sensors or sensor monitoring software, please visit us on the web at [monnit.com/support/](https://monnit.com/support/).

The logo for Monnit Corporation, featuring the word "MONNIT" in a bold, sans-serif font. The letter "O" is stylized with a red-to-blue gradient and a registered trademark symbol (®) to its upper right.

Monnit Corporation  
3400 South West Temple  
Salt Lake City, UT 84115  
801-561-5555  
[www.monnit.com](https://www.monnit.com)