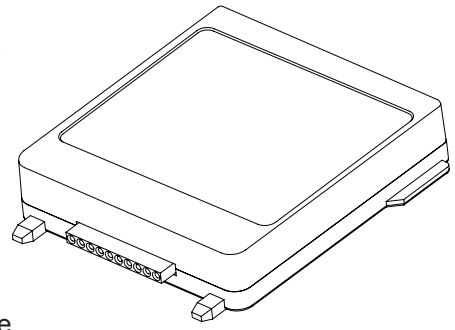
Z-Wave® USNAP® Module User Guide

Radio Thermostat

Radio Thermostat Company of America

The RTZW-01 USNAP module is a plug in module that adds Z-Wave® functionality to a CT-Series Thermostat [CT= Communicating Thermostat].



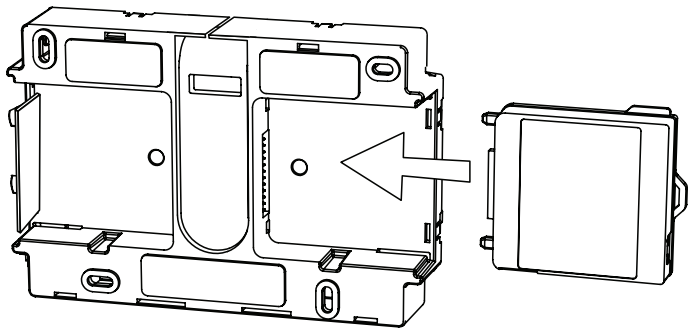
A CT-Series Thermostat with an RTZW-01 module is compatible with a broad range of Z-Wave® certified devices from other manufacturers and can be controlled wirelessly with Z-Wave® controllers supporting the Thermostat General V2 Device Class. Please consult the user manual and your controller supplier for more details.

The RTZW-01 provides two-way communication as part of a Z-Wave® network. When it receives commands from Controller device, it sends back confirmation that the command was received and implemented. Each module in a Z-Wave® network communicates with every other module,

acting as a “repeater” and routing your commands to their destination by the most reliable pathway. When Z-Wave® devices (regardless of manufacturer) are installed throughout the house, signals are automatically routed around obstacles or dead spots, strengthening the network as more devices are added.

The Basics

The RTZW-01 USNAP module is designed to be inserted into the right side USNAP slot in any CT-Series Thermostat. (Follow the instructions that come with your CT-Series Thermostat and install it to your HVAC system before installing the RTZW-01 USNAP module.)



Note: Some models of the CT-Series are capable of operating in battery only mode (i.e. without C-wire from HVAC system),

yet some other models of the CT-Series (like the CT-80) are only capable of working in your HVAC system with the C-wire present.

The RTZW-01 USNAP module is designed to work with either constant present power in the thermostat (ie C-wire), or it can run only on batteries when no C-wire is present. Depending on which model CT-Thermostat you have, and how your CT-Thermostat is powered will determine which functionality the RTZW-01 module will have when added to a Z-Wave® network.

Getting Started

Examine your CT-Thermostat and identify an empty USNAP slot (refer to your CT-Thermostat instruction manual for details).

1) Power OFF the thermostat by removing batteries and disconnecting the C wire.
2) Insert the RTZW-01 module into the CT-Thermostat Radio Slot [right side] with the label on the RTZW-01 facing the wall behind the thermostat. The RTZW-01 module should slide in and engage with no visible protrusion from the thermostat.
3) Power up the thermostat by re-installing the batteries and re-connecting the C wire.
4) Press the reset button on your CT (see thermostat documentation) and reset the CT by pressing the reset button for 1 second.

During reset you should see the “radio tower” icon appear on your CT along with the slot number “2” indicating that the CT Thermostat is initializing the RTZW-01 USNAP module. When this finishes (about 15 seconds), your CT Thermostat will be ready to join and be controlled by a Z-Wave® network.

Join or Un-Join Network

1) Set your primary controller to INCLUDE mode to add the thermostat as a node on your network (see your specific controller’s User Manual for detailed instructions).

2) Press/Touch the Mate Button. This will bring you to the network joining screen.

Mate button: On touch screen units the MATE button is on the MENU screen. On basic LCD thermostat’s the mate button is under the top cover at the right side.

3) If you only have 1 USNAP module inserted in the thermostat you will see a r1 or r2 to indicate that the radio is in slot 1 or slot 2. If you have multiple radios you can select which radio you want to join the network by selecting an r1 or r2 from the top left hand corner of the screen. When you have selected a radio, the large r1 or r2 will appear in the center of the screen.

4) When the radio is selected and the large r1 or r2 is on the center of the screen, press the mate button, this will initiate the mating process. When a device has joined a network the icon **LINK** will appear under the radio tower. Similarly, when you are trying to leave a network, the icon **LINK** will disappear when the node has successfully left the network.

Your controller will indicate the thermostat was successfully added to its network (see your specific controller's User Manual for details.)

For other controller specific tasks such as adding the thermostat to Scenes or Groups, or deleting the thermostat as a node, use the mate button to activate the Z-Wave® signal.

Power Requirements

Your thermostat ZWave module has been designed to work on either battery power or power from your furnace. If your HVAC system has a power wire (also known as a "C" or "COMMON" wire) and the thermostat is connected to the "C" wire, power will come from the furnace unless there is no power available and then power will come from the batteries. So, if you do not have a "C" wire, ask your HVAC technician to install one the next time you have your furnace upgraded or serviced. This will allow you to achieve optimal performance and convenience.

Remember to replace the three (3) AA batteries in your thermostat with new alkaline batteries whenever the low battery indicator comes on. If you leave your house for two weeks or more, it is essential for you to replace the batteries. **If your thermostat is not powered by your HVAC system and has to rely entirely on batteries, the HVAC system will stop working when the batteries die.**

Battery Power

When your thermostat is running on battery power, the Z-Wave® radio will turn off to help conserve battery life. The RTZW-01 Z-Wave® radio module supports Z-Wave® beaming, which allows other devices in the network to wake up the RTZW-01 and accept commands, and then go back to sleep.

C-Wire Power

When your thermostat is running on C-Wire power, the Z-Wave® radio will stay on and actively help in routing messages within the Z-Wave® network.

Operation

See your specific controller's User Manual for detailed instructions on operating your thermostat. If your controller supports full thermostat device class functions then the following remote features are available:

a) Up and Down Temperature Control
b) Change between HEAT and COOL modes
c) Read the current temperature
d) Set/Read the indicator
e) Set/Read the Fan mode
f) Set/Read the clock (on certain CT models only)
g) Set/Read the user display area (on certain CT models only)

NOTE: the SAVE ENERGY ffunction is disabled with Z-Wave operation.

Simple Mode/Normal Mode

The CT30 offers two modes of operation, Normal Mode and Simple mode. Normal mode is intended for use as a stand alone programmable thermostat. In Normal mode the user can program the thermostat to change temperatures at various points throughout the day. Simple mode is intended for use with a larger control system - like an alarm system or home automation system. Simple mode is meant to run a single temperature constantly. This temperature can be set locally on the thermostat, or remotely using a Z-Wave® USNAP module. To enter simple mode: Press and hold the PROG button for 12 seconds. To leave simple mode, press and hold the PROG button for 12

Advanced Z-Wave® Information

The RTZW-01 supports compliant mapping of the Z-Wave® BASIC_ COMMAND_CLASS to the CT thermostat "Energy Saving" and "Comfort Mode" as follows:

Basic Set (Value = 0x00) = Set Energy Saving Mode
Basic Set (Value = 0x01-0x63 & 0xFF) = Set Comfort Mode

Energy Savings applies a 4 ^{o}F setback to the existing set point temperature to comply with EPA recommendations for energy savings.

FCC and IC Statement

FCC Regulatory Information:

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, 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, 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 and correct

the interference by one or more of the following measures:

a) reorient or relocate the receiving antenna,
b) increase the separation between the equipment and receiver,
c) 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.

IC Regulatory Information:
This Class B digital apparatus meets all requirements of the Canadian Interference Causing Equipment Regulations. 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 of the device. Cet appareillage numérique de la classe B répond a toutes les exigences de l'interférence canadienne causant des règlements d'équipement. L'opération est sujette aux deux conditions suivantes: (1) ce dispositif peut ne pas causer l'interférence nocive, et (2) ce dispositif doit accepter n'importe quelle interférence reçue, y compris l'interférence qui peut causer l'opération peu désirée.

WARNING: Changes or modifications to this receiver not expressly approved by RTCOA. could void the user's authority to operate this equipment.

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