RCS Remote Temperature and Humidty RTH100Z Manual

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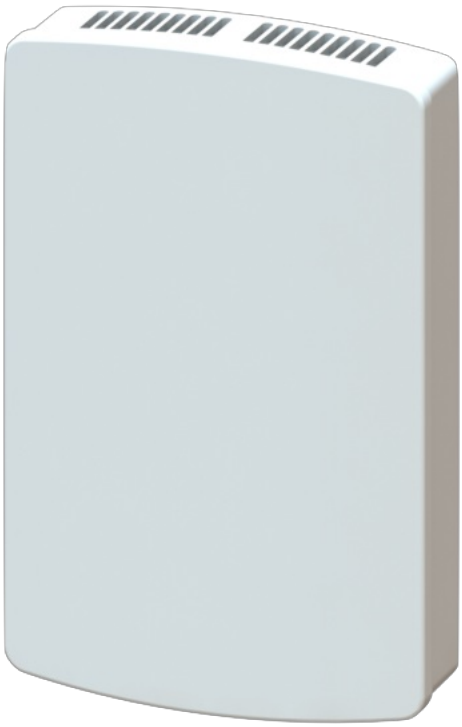
RCS

Remote Temperature and Humidty

SKU: RTH100Z



Quickstart

This is a

Alarm Sensor
for
U.S. / **Canada** / **Mexico**.

Please make sure the internal battery is fully charged.

To add this device to your network execute the following action:

Inclusion: Including the RTH100Z into an Existing Network:1. Set your primary controller to Include mode, to add the RTH100Z as a node on your network (see your controllers user manual for detailed instructions).2. Press and release the Install button. The controller will indicate the device has been included into the network.Your controller will indicate the RTH100Z was successfully added to its network (see your controllers user manual for details).Inclusion and exclusion are always done at normal transmit power mode.If your controller supports NWI, then you can optionally set the primary to NWI include mode. Please note that NWI inclusion mode does not end when you have included a new node.This allows multiple nodes to be included without having to physically go back to the controller to initiate the next inclusion.Therefore you must manually terminate NWI inclusion mode at the controller when you have finished including any new nodes to the network.Since intermediate included nodes will assist the inclusion process by routing messages, we recommend that nodes close to the primary controller be installed first, proceeding out in consecutive rings from the controller.Note: Consult your controllers user manual for details on removing a device from a Z-Wave network.

Please refer to the
Manufacturers Manual for more information.

Important safety information

Please read this manual carefully. Failure to follow the recommendations in this manual may be dangerous or may violate the law.
The manufacturer, importer, distributor and seller shall not be liable for any loss or damage resulting from failure to comply with the instructions in this manual or any other material.
Use this equipment only for its intended purpose. Follow the disposal instructions.

Do not dispose of electronic equipment or batteries in a fire or near open heat sources.

What is Z-Wave?

Z-Wave is the international wireless protocol for communication in the Smart Home. This device is suited for use in the region mentioned in the Quickstart section.

Z-Wave ensures a reliable communication by reconfirming every message (**two-way communication**) and every mains powered node can act as a repeater for other nodes (**meshed network**) in case the receiver is not in direct wireless range of the transmitter.

This device and every other certified Z-Wave device can be **used together with any other certified Z-Wave device regardless of brand and origin** as long as both are suited for the same frequency range.

If a device supports **secure communication** it will communicate with other devices secure as long as this device provides the same or a higher level of security. Otherwise it will automatically turn into a lower level of security to maintain backward compatibility.

For more information about Z-Wave technology, devices, white papers etc. please refer to www.z-wave.info.

Product Description

Remote Temperature and Humidity Sensor for HVAC market

Prepare for Installation / Reset

Please read the user manual before installing the product.

In order to include (add) a Z-Wave device to a network it **must be in factory default state.** Please make sure to reset the device into factory default. You can do this by performing an Exclusion operation as described below in the manual. Every Z-Wave controller is able to perform this operation however it is recommended to use the primary controller of the previous network to make sure the very device is excluded properly from this network.

Reset to factory default

This device also allows to be reset without any involvement of a Z-Wave controller. This procedure should only be used when the primary controller is inoperable.

Factory Reset To reset the RTH100Zs configurations and Z-Wave parameters to Factory Settings (Including association groups and scene configurations), and remove the RTH100Z from any Z-Wave network: Note: Please use this procedure only when the network primary controller is missing or otherwise inoperable1. Hold down the Install button for approximately 10 seconds 2. Release the install button (the RTH100Z will reset all internal configuration including z-wave configurations). The unit will then reset. 3. When the Status LED begins to blink (un-enrolled) the unit has finished restoring configurations is running in normal mode.

Inclusion/Exclusion

On factory default the device does not belong to any Z-Wave network. The device needs to be **added to an existing wireless network** to communicate with the devices of this network. This process is called **Inclusion**.

Devices can also be removed from a network. This process is called **Exclusion**. Both processes are initiated by the primary controller of the Z-Wave network. This controller is turned into exclusion respective inclusion mode. Inclusion and Exclusion is then performed doing a special manual action right on the device.

Inclusion

Inclusion: Including the RTH100Z into an Existing Network:1. Set your primary controller to Include mode, to add the RTH100Z as a node on your network (see your controllers user manual for detailed instructions).2. Press and release the Install button. The controller will indicate the device has been included into the network.Your controller will indicate the RTH100Z was successfully added to its network (see your controllers user manual for details).Inclusion and exclusion are always done at normal transmit power mode.If your controller supports NWI, then you can optionally set the primary to NWI include mode. Please note that NWI inclusion mode does not end when you have included a new node.This allows multiple nodes to be included without having to physically go back to the controller to initiate the next inclusion.Therefore you must manually terminate NWI inclusion mode at the controller when you have finished including any new nodes to the network.Since intermediate included nodes will assist the inclusion process by routing messages, we recommend that nodes close to the primary controller be installed first, proceeding out in consecutive rings from the controller.Note: Consult your controllers user manual for details on removing a device from a Z-Wave network.

Exclusion

Exclusion: Removing the RTH100Z from a Network:1. Set your primary controller to Remove mode, to remove the RTH100Z as a node on your network (see your controllers user manual for detailed instructions).2. Press and release the Install button. The controller will indicate the device has been removed from the network.3. The device will automatically be restored to its default settings

Communication to a Sleeping device (Wakeup)

This device is battery operated and turned into deep sleep state most of the time

to save battery life time. Communication with the device is limited. In order to communicate with the device, a static controller **C** is needed in the network. This controller will maintain a mailbox for the battery operated devices and store commands that can not be received during deep sleep state. Without such a controller, communication may become impossible and/or the battery life time is significantly decreased.

This device will wakeup regularly and announce the wakeup state by sending out a so called Wakeup Notification. The controller can then empty the mailbox. Therefore, the device needs to be configured with the desired wakeup interval and the node ID of the controller. If the device was included by a static controller this controller will usually perform all necessary configurations. The wakeup interval is a tradeoff between maximal battery life time and the desired responses of the device. To wakeup the device please perform the following action:

To wake-up the device for configuration you can triple-press the install button.

Quick trouble shooting

Here are a few hints for network installation if things dont work as expected.

1. Make sure a device is in factory reset state before including. In doubt exclude before include.
2. If inclusion still fails, check if both devices use the same frequency.
3. Remove all dead devices from associations. Otherwise you will see severe delays.
4. Never use sleeping battery devices without a central controller.
5. Dont poll FLIRS devices.
6. Make sure to have enough mains powered device to benefit from the meshing

Association – one device controls an other device

Z-Wave devices control other Z-Wave devices. The relationship between one device controlling another device is called association. In order to control a different device, the controlling device needs to maintain a list of devices that will receive controlling commands. These lists are called association groups and they are always related to certain events (e.g. button pressed, sensor triggers, …). In case the event happens all devices stored in the respective association group will receive the same wireless command wireless command, typically a ‘Basic Set’ Command.

Association Groups:

Group NumberMaximum NodesDescription

1	1	Z-Wave Plus Lifeline
2	5	Temperature Reports
3	5	Humidity Reports
4	5	Temperature driven BASIC_SETs
5	5	Humidity driven BASIC_SETs
6	5	Battery Reports

Configuration Parameters

Z-Wave products are supposed to work out of the box after inclusion, however

certain configuration can adapt the function better to user needs or unlock further enhanced features.

IMPORTANT: Controllers may only allow configuring signed values. In order to set values in the range 128 … 255 the value sent in the application shall be the desired value minus 256. For example: To set a parameter to 200â€ˆit may be needed to set a value of 200 minus 256 = minus 56. In case of a two byte value the same logic applies: Values greater than 32768 may needed to be given as negative values too.

Parameter 1: Time between sending Battery Reports in Hours

Time between sending Battery Reports in Hours
Size: 1 Byte, Default Value: 0

SettingDescription

1 – 127	1127 hours
0	Disabled

Parameter 10: Group2 Temperature Delta Autosend Threshold

Group2 Temperature Delta Autosend Threshold (how many degree change from the last autosend)
Size: 1 Byte, Default Value: 10

SettingDescription

1 – 50	In tenths of degrees
0	Disabled

Parameter 11: Group2 Periodic Temperature Send Interval

Group2 Periodic Temperature Send Interval (minutes)
Size: 1 Byte, Default Value: 0

SettingDescription

1 – 120	Minutes
0	Disabled

Parameter 12: Send Basic Set On above humidity

Send Basic Set On above humidity See also Register 20
Size: 1 Byte, Default Value: 0

SettingDescription

0 – 100	Percent
0	Disabled

Parameter 13: Send Basic Set On below humidity

Send Basic Set On below humidity See also Register 20
Size: 1 Byte, Default Value: 0

SettingDescription

0 – 100	Percent
0	Disabled

Parameter 14: Send Basic Set Off above humidity

Send Basic Set Off above humidity See also Register 20
Size: 1 Byte, Default Value: 0

SettingDescription

0 – 100	Percent
0	Disabled

Parameter 15: Send Basic Set Off below humidity

Send Basic Set Off below humidity See also Register 20
Size: 1 Byte, Default Value: 0

SettingDescription

0 – 100	Percent
0	Disabled

Parameter 16: Group1- Humidity Delta Autosend Threshold

Group1- Humidity Delta Autosend Threshold (how many degree change from the last autosend)
Size: 1 Byte, Default Value: 5

SettingDescription

1 – 50	Percent

Parameter 17: Group1- Periodic Humidity Send Interval

Group1- Periodic Humidity Send Interval
Size: 1 Byte, Default Value: 0

SettingDescription

1 – 120	Minutes
0	Disabled

Parameter 18: Group3- Humidity Delta Autosend Threshold

Group3- Humidity Delta Autosend Threshold (how many degree change from the last autosend)
Size: 1 Byte, Default Value: 5

SettingDescription

1 – 30	Percent
0	Disabled

Parameter 19: Group3- Periodic Humidity Send Interval

Group3- Periodic Humidity Send Interval (minutes)
Size: 1 Byte, Default Value: 0

SettingDescription

1 – 120	Minutes
0	Disabled

Parameter 2: Send Basic Set On above temp

Send Basic Set On above temp See also Register 20
Size: 1 Byte, Default Value: 121

SettingDescription

15 – 120	15120 Degrees F
121	Disabled

Parameter 20: Basic Set Options for Temp and Humidity

Basic Set Options for Temp and Humidity
Size: 1 Byte, Default Value: 1

SettingDescription

2	Enable Configuration Registers 2, 5, 13, 14
1	Enable Configuration Registers 2, 5, 12, 15
3	Enable Configuration Registers 3, 4, 12, 15
4	Enable Configuration Registers 3, 4, 13, 14

Parameter 21: Temp offset

Temp offset
Size: 1 Byte, Default Value: 0

SettingDescription

249 – 7	Degrees(-7 to 7)

Parameter 22: Humidity offset

Humidity offset
Size: 1 Byte, Default Value: 0

SettingDescription

249 – 7	Percent(-7 to 7)

Parameter 23: Humidity Filter Time Constant

Humidity Filter Time Constant
Size: 1 Byte, Default Value: 30

SettingDescription

1 – 60	Minutes

Parameter 3: Send Basic Set On below temp

Send Basic Set On above temp See also Register 20
Size: 1 Byte, Default Value: 121

SettingDescription

15 – 120	15120 Degrees F
121	Disabled

Parameter 4: Send Basic Set On below temp

Send Basic Set On below temp See also Register 20
Size: 1 Byte, Default Value: 121

SettingDescription

15 – 120	15120 Degrees F
121	Disabled

Parameter 5: Send Basic Set Off below temp

Send Basic Set Off below temp See also Register 20
Size: 1 Byte, Default Value: 121

SettingDescription

15 – 120	15120 Degrees F
121	Disabled

Parameter 6: Make multiple attempts for all Basic Set Commands

Make multiple attempts for all Basic Set Commands
Size: 1 Byte, Default Value: 0

SettingDescription

1 – 5	Number of extra attempts sent every minute after first send
0	Disabled

Parameter 7: Temp Units

Temp Units
Size: 1 Byte, Default Value: 1

SettingDescription

1	Fahrenheit
0	Celsius

Parameter 8: Group1 Temperature Delta Autosend Threshold

Group1 Temperature Delta Autosend Threshold (how many degree change from the last autosend)
Size: 1 Byte, Default Value: 10

SettingDescription

1 – 200	In tenths of degrees

Parameter 9: Group1 Periodic Temperature Send Interval

Group1 Periodic Temperature Send Interval (minutes)
Size: 1 Byte, Default Value: 0

SettingDescription

1 – 120	Temperature Send Interval (minutes)
0	Disabled

Technical Data

Hardware Platform	ZM5202
Device Type	Notification Sensor
Network Operation	Reporting Sleeping Slave
Firmware Version	HW: 2 FW: 1.40
Z-Wave Version	6.51.07
Certification ID	ZC10-17115888
Z-Wave Product Id	0x0010.0x5253.0x5433
Color	White
Firmware Updatable	Updatable by Consumer by RF
Sensors	Air TemperatureHumidity
Frequency	XXfrequency
Maximum transmission power	XXantenna

Supported Command Classes

- Association Grp Info
- Association V2

- Battery
- Configuration
- Device Reset Locally
- Firmware Update Md V2
- Manufacturer Specific V2
- Powerlevel
- Sensor Multilevel V5
- Version V2
- Wake Up V2
- Zwaveplus Info V2

Controlled Command Classes

- Basic

Explanation of Z-Wave specific terms

- **Controller** — is a Z-Wave device with capabilities to manage the network. Controllers are typically Gateways,Remote Controls or battery operated wall controllers.
- **Slave** — is a Z-Wave device without capabilities to manage the network. Slaves can be sensors, actuators and even remote controls.
- **Primary Controller** — is the central organizer of the network. It must be a controller. There can be only one primary controller in a Z-Wave network.
- **Inclusion** — is the process of adding new Z-Wave devices into a network.
- **Exclusion** — is the process of removing Z-Wave devices from the network.
- **Association** — is a control relationship between a controlling device and a controlled device.
- **Wakeup Notification** — is a special wireless message issued by a Z-Wave device to announces that is able to communicate.
- **Node Information Frame** — is a special wireless message issued by a Z-Wave device to announce its capabilities and functions.