Always Connected. Always Covered.

Leak Sensor

DMWS1

User Manual

Preface

As this is the full User Manual, a working knowledge of Z-Wave automation terminology and concepts will be assumed. If you are a basic user, please visit www.domeha.com for instructions. This manual will provide in-depth technical information about the Leak Sensor, especially in regards to its compliance to the Z-Wave standard (such as compatible Command Classes, Association Group capabilities, special features, and other information) that will help you maximize the utility of this product in your system.

Table of Contents

Description & Features

The Dome Leak Sensor is a battery powered Z-Wave Plus device that can detect wetness and send a notification when it does so. The Leak Sensor consists of two parts—the “SENSOR ASSEMBLY,” and the optional “REMOTE SENSOR PROBE.” They both detect water similarly, using three visible “LEAD.” The moment water touches any of the LEAD, the device will beep and send a notification with its moisture status to its Z-Wave controller. The REMOTE SENSOR PROBE is used to monitor confined or otherwise difficult to reach places.

Key Features:

» Z-Wave Plus Certified

» Beeps and sends Z-Wave notification when water is detected

» Thin profile—can fit under appliances

» Remote Sensor Probe with 4’ extension for hard-to-reach areas

» Up to 150’ range

» Three-Year Battery Life

» Low Battery Indication

» Good to place near washing machines, dishwashers, sinks, toilets, or your indoor garden to alert you of any leaky accidents!

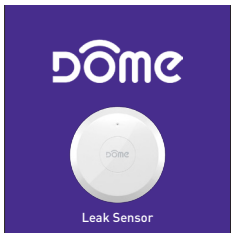
Specifications

Technical Specifications

Radio protocol	Z-Wave(500 series)
Power supply	Single CR14250 3.0V battery
Power Consumption	0.13W
Working current	35mA
Operating temperature	32—104 °F (0—40 °C)
Radio frequency	908.4 MHz US
Range	Up to 150’ depending on environment
Dimensions (L x W x H)	SENSOR ASSEMBLY: Ø2.63” x 1”

Table 1 - Technical Specifications

Package Contents:



USER MANUAL

SENSOR ASSEMBLY

MAIN BODY CRADLE

BATTERY

REMOTE SENSOR PROBE

1xSCREW

1x WALL ANCHOR

Physical Characteristics

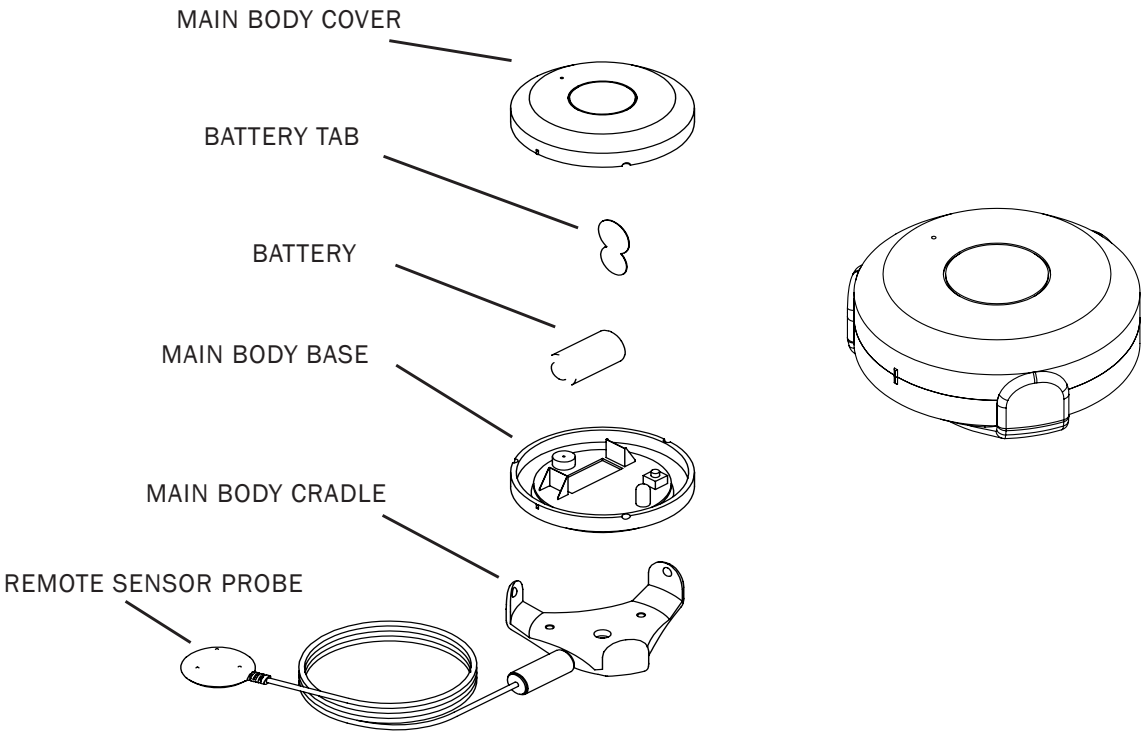


Figure 1 - Exploded View

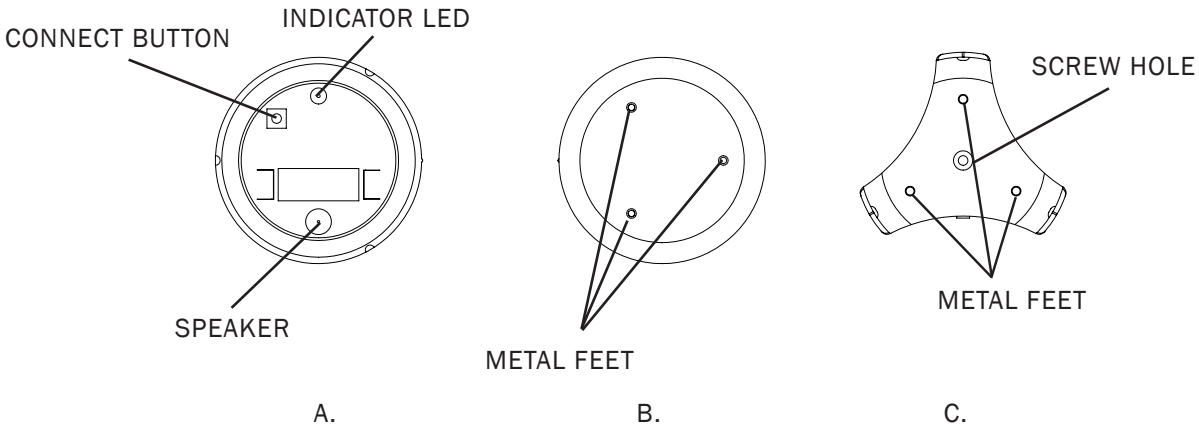


Figure 2 - Showing individual parts A. Inside the Leak Sensor, B. Underneath the Leak Sensor, and C. on the MAIN BODY CRADLE.

Inclusion & Exclusion

Inclusion

Follow the instructions for your Z-Wave Certified Conto enter inclusion mode. When prompted by the controller:

1. The Leak Sensor should be within 10’ of your Z-Wave controller for the inclusion process. After successful pairing, the device can be brought to the desired location.
2. Remove the MAIN BODY COVER by twisting it apart counter-clockwise.
3. Remove the BATTERY TAB.
4. Press the BUTTON quickly 3 times in a row.

The INDICATOR LED will flash five times indicating inclusion.

Exclusion

Follow the instructions for your Z-Wave Certified Conto enter exclusion mode. When prompted by the controller:

1. Remove the MAIN BODY COVER from the MAIN BODY BASE.
2. Press the CONNECT BUTTON quickly 3 times in a row.

The INDICATOR LED will flash five times indicating exclusion/disconnection.

Factory Reset & Misc. Functions

Resetting the Leak Sensor

If needed, the Leak Sensor can be reset locally by following these steps. Only do this when your Z-Wave controller is disconnected or otherwise unreachable. Beware that resetting your device will disconnect it from the system:

1. Remove the MAIN BODY COVER and confirm that your Leak Sensor is powered up.
2. Press and hold the CONNECT BUTTON for at least 10 seconds then release. A flashing light indicates a successful factory reset.
3. The Leak Sensor's memory will be erased to factory settings.

Waking Up The Leak Sensor

Because the Leak Sensor is a battery powered device, it wakes up on regular intervals to give battery and other status updates to the controller, as well as to accept configuration settings from the controller. This helps to extend the battery life. The device can be forced to wake up to submit these reports or accept new settings immediately by simply pressing and holding the BUTTON for two seconds. The LED INDICATOR will flash once indicating successful wake up.

Physical Installation

The device should already be included in your Z-Wave system before continuing further. Study the Pre-Installation Checklist below for a broad overview of installation options and other notes to bear in mind

Pre-Installation Checklist

- ✓ The MAIN BODY CRADLE and REMOTE SENSOR PROBE are optional, to help monitor hard-to-reach areas—study Figures 3 and 4 to understand when, where, and why to use the REMOTE SENSOR PROBE
- ✓ The Leak Sensor detects moisture the moment water contacts the METAL FEET on the REMOTE SENSOR PROBE or the MAIN BODY BASE
- ✓ To monitor a pipe or appliance for leaks, place the Leak Sensor nearby on a flat surface where water is likely to accumulate during a leak
- ✓ If there is not enough space for the SENSOR ASSEMBLY to fit, use the optional REMOTE SENSOR PROBE
- ✓ When using the REMOTE SENSOR PROBE, the SENSOR ASSEMBLY will rest in the MAIN BODY CRADLE
- ✓ All three METAL FEET should contact the surface
- ✓ The REMOTE SENSOR PROBE can also hang mid-air to monitor rising water levels (for example in a sump pump pit)

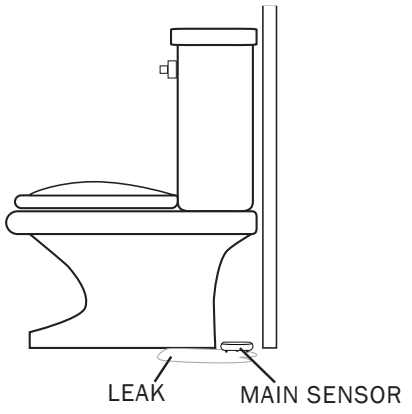


Figure 3 - Leak Sensor Installation Without the REMOTE SENSOR PROBE

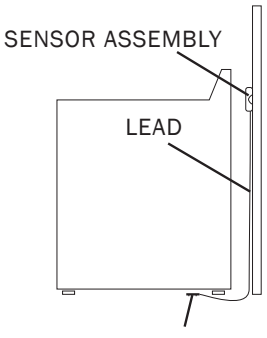


Figure 4 - Leak Sensor Installation With the REMOTE SENSOR PROBE

Installation—Without the REMOTE SENSOR PROBE

1. Make sure the Leak Sensor is already included in your Z-Wave System and bring it to your desired installation location.
2. Confirm that your device can communicate with your Z-Wave Controller from the final installed location before proceeding.
3. Place the SENSOR ASSEMBLY on a flat surface near the device to be monitored (see "Pre-Installation Checklist" on page 9 for proper placement instructions.)
4. Double-check that your Z-Wave Controller can still communicate with the Leak Sensor, and pour a small amount of water on the floor to emulate a leak and confirm that the device beeps and reports the event to your Controller.

Installation—With the REMOTE SENSOR PROBE

Hard to reach areas can be monitored for leaks using the included REMOTE SENSOR PROBE (see "Pre-Installation Checklist" on page 9.)

1. Mount the MAIN BODY CRADLE on a wall near the location you wish to monitor, making sure the REMOTE SENSOR PROBE's cable will reach it comfortably. You may optionally rest the MAIN BODY CRADLE, unmounted, on a table, shelf, or other surface.
2. Snap the SENSOR ASSEMBLY into the MAIN BODY CRADLE, making sure the METAL FEET on the SENSOR ASSEMBLY line up with their mates on the MAIN BODY CRADLE.
3. Plug the REMOTE SENSOR PROBE into the MAIN BODY CRADLE and place the other end of the PROBE in the area to monitor, making sure the METAL FEET are flat on the surface.

LED Behavior

Color	Behavior	This happens when...
Red	Blink 5 times in 5 seconds (slow)	...the Leak Sensor was just powered on, but is not yet included in a system.
	Blink 5 times in 2.5 seconds (medium)	...the CONNECT BUTTON is pressed 3 times quickly (regardless of inclusion status.)
	Blink 5 times in 1.5 seconds (fast)	...the Leak Sensor is powered on, and already included in a system.
	Stay on for 2+ seconds straight	...the CONNECT BUTTON is pressed and held for 10+ seconds, resetting Leak Sensor to factory settings.
	Blinks while Beeping	...the SENSOR detects a leak.
	Blinks once	...the CONNECT BUTTON is pushed once.

Table 2 - LED Blinking Behavior

Button Behavior

Action	Condition	Result
Press and hold CONNECT BUTTON for 2 seconds	Leak Sensor Already Included in System	Device sends a wake up notification to its controller, awaits further instructions, and blinks the LED Indicator once
Push CONNECT BUTTON 3 Times	Leak Sensor Already Included in System	Device sends node info to Group 1
	Leak Sensor Already Included, and Controller is in Exclusion Mode	Device is excluded from the system and removes the Home ID from its memory
	Leak Sensor Not Yet Included in System, and Controller is in Inclusion Mode	Device enters inclusion mode and includes into whichever network is also in inclusion mode
Press and hold CONNECT BUTTON for 10+ seconds	Leak Sensor Already Included in System	Device will be reset to factory settings, and a DEVICE_RESET_LOCALLY command will be sent to Node 1
Press and Hold for 10+ seconds	Any condition (as long as the device has power)	The device's memory will erase to factory default settings and any associations, configuration parameters, and other locally saved data will be lost

Table 3 - Button Behavior

Compatible Command Classes

Command Class	Notes
Device Reset Locally V1 (0x5A)	-
Powerlevel V1 (0x73)	-
Battery V1(0x80)	-
Association Group Information V1 (0x59)	-
Z-Wave Plus Info V2 (0x5E)	**Returned Value:** 01 06 00 0C 05 0C 05 **Z-Wave Plus Version:** 01 **Role Type**: 06 *(Slave Sleeping Reporting)* **Node Type**: 00 *(Z-Wave Plus Node)* **Installer Icon Type**: 0C 05 *(Water Alarm)* **User Icon Type**: 0C 05 *(Water Alarm)*
Version V2 (0x86)	**Returned Value:** 06 04 05 02 28 10 00 **Z-Wave Library Type:** 06 *(Routing Slave)* **Protocol Version**: 04 05 **Protocol Sub-Version**: 02 28 **Application Version**: 10 **Application Sub-Version**: 00
Manufacturer Specific V2 (0x72)	**Returned Value:** 02 1F 03 01 85 **Manufacturer ID:** 02 1F **Product Type**: 03 **Product ID**: 00 85
Wake Up V2 (0x84)	The wake-up interval is set in seconds, and is 43,200 seconds (12 hours) by default. The wake-up interval can be set to any value from 300s (5 minutes) to 16,777,200s (about 190 days) in 60-second increments.
Binary Sensor (0x30)	The Leak Sensor also sends a Binary Sensor Report when a leak is detected or removed. See below for the SENSOR_BINARY_REPORT parameters sent: **Sensor Type**: 06 *(Water)* **Leak Detected Value**: 0xFF **Leak Removed Value**: 0x00

Table 4 - Command Classes

Command Class	Notes
Association V2 (0x85)	**Group 1** Group 1 is the “Lifeline” group, which can hold five members, typically including the main Z-Wave controller. The Leak Sensor sends this group a Notification Report and a Binary Sensor Report when water is detected or removed. It also sends this group a Battery Report in reponse to Battery Get commands and a Locally Reset Notification upon local reset. **Group 2** The Leak Sensor sends a Basic Set command to Association Group 2 (or the Control Group) to directly trigger devices (like a light, chime, etc.) in response to a detected leak. Then, after the leak is no longer detected, a BASIC_SET(0x00) command is sent to reset the device (e.g. turn off the light.) The value of the Basic Set command (e.g. brightness of the lamp) is configured using configuration parameter 7. **Group 3** Group 3 supports up to 5 members and the Leak Sensor sends it a NOTIFICATION_REPORT when water is detected or removed. **Group 4** Group 4 supports up to 5 members and the Leak Sensor sends it a SENSOR_BINARY_REPORT when water is detected or removed.
Notification V4 (0x71)	The Leak Sensor sends a Notification Report whenever a leak is detected or removed. **Returned Value:** 00 00 00 FF 05 XX 00 00 **V1 Alarm Type**: 00 *(Unsupported)* **V1 Alarm Level**: 00 *(Unsupported)* **Reserved**: 00 *(Reserved)* **Notification Status:** FF *(Unsolicited Reporting is Enabled)* **Notification Type**: 05 *(Water Alarm)* **Event**: **Leak Detected**—02 *(Water Leak Detected, Unknown Location)* **Leak Removed**—00 *(Event Inactive)* **Sequence/Reserved/Event Parameters Length:** 00 **Notification Event Parameters**: 00 *(No Event Parameters)*
Configuration V1(0x70)	See “Configuration Parameters” on page 15.

Table 5 - Command Classes Continued

Configuration Parameters

Configuration parameters are sent using a standard syntax to ensure interoperability between all manufacturers' products. All values are represented using the hexadecimal number system.

Typical syntax is as shown below. Note that the value sent must be the exact size, in bytes, as accepted by the setting. The "extra" spaces should be filled with zeros (see the "value" column below.)

Example Configuration Parameter: **02 02 00 0A**

Param #	Size	Value
02 *(Param #2)*	02 *(2 Bytes)*	00 0A *(10)*

Param #	Size	Name	Available Values	Default Value
05	This parameter enables or disables the audible alarm ("beeping") functionality of the Leak Sensor.			
	01	Enable/Disable Audible Alarm	00 *(Audible Alarm Disabled)* 01 *(Audible Alarm Enabled)*	01 *(Audible Alarm Enabled)*
06	This parameter enables or disables the Leak Sensor - if disabled, the device will not respond in any way to detected leaks.			
	01	Enable/Disable Water Detection	00 *(Water Detection Disabled)* 01 *(Water Detection Enabled)*	01 *(Water Detection Enabled)*
07	This parameter defines the value sent by the BASIC_SET command to Association Group 2 (for more information, see "Assocation Groups".)			
	01	Basic Set Level	00 *(0/Turn Off Device)* 01 ~ 63 *(0-99)* FF *(255/Turn On Device)*	FF *(255/Turn On Device)*

Table 6 - Configuration Parameters

Configuration Parameters Cont'd

When the Leak Sensor detects a leak, it beeps intermittently in the pattern shown in Figure 5. Total Alarm Duration, Mute Time, Initial Alarm, and Reminder Alarm duration times are all configurable using Configuration Parameters 1, 2, 3, and 4 respectively.

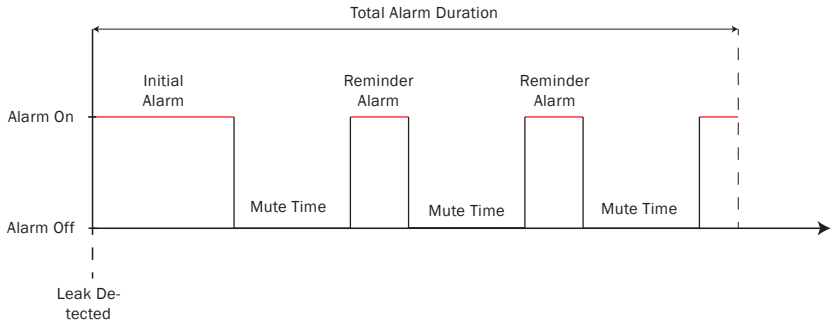


Figure 5 - Leak Sensor Alarm/Beeping behavior.

Param #	Size	Name	Available Values	Default Value
01	This parameter sets the total amount of time the Leak Sensor will beep and light its LED in the event of a leak (see Figure 5.)			
	01	Total Alarm Duration	00 *(Leak Sensor beeps until water is removed)* 01 ~ FF *(1 ~ 255 in Minutes)*	78 *(120 min)*
02	This parameter defines the amount of time the Leak Sensor remains quiet between each Reminder Alarm (see Fig 5.)			
	01	Mute Time	01 ~ FF *(1 ~ 255 minutes)*	01 *(1 min)*
03	This parameter sets the amount of time the Leak Sensor beeps before it is muted (see Fig 5.)			
	01	Initial Alarm	0A ~ FF *(10 ~ 255 seconds)*	3C *(60 sec)*
04	This parameter sets the length of each beep after the Initial Alarm (see Fig 5.)			
	01	Reminder Alarm	05 ~ FF *(5 ~ 255 seconds)*	05 *(5 sec)*

Table 7 - Configuration Parameters Continued

Troubleshooting

Q: Help! My Leak Sensor paired successfully, but my controller can't see it anymore after I installed it!

A: First, make sure your battery didn't come loose during set-up. Otherwise, the Z-Wave signal is probably weak in that area of your home. Remember that the 120' - 150' range doesn't take into account walls, furniture, and other obstacles. To boost your Z-Wave network coverage, add a few non-battery powered Z-Wave devices between the controller and the furthest device, like the Dome On/Off Plug or Water Main Shut-Off. You can even purchase dedicated Z-Wave extenders from 3rd party manufacturers.

Q: There's so many words in this manual I don't understand. How can I learn more about Z-Wave?

A: Remember you don't have to understand everything in this manual to start automating your home. Our Quick-Start Guides have all you need to start using any device. For more thorough information about Z-Wave home automation, visit www.domeha.com/support.

Q: There is a leak, but the sensor isn't beeping or sending signals!

A: Most likely the METAL FEET are not making full contact with the surface it is sitting on. Try placing it properly, and if you are still having problems, please visit www.domeha.com/support.

Q: I've tried multiple times, but I can't include the Leak Sensor in my system.

A: Check your battery and make sure your device is getting power. Then, Factory Reset (see "Resetting the Leak Sensor" on page 8) and try going through the inclusion process again. If you are still having issues, please visit www.domeha.com/support

Q: All of a sudden, my Leak Sensor is offline.

A: Check your battery and make sure your device is getting power. If powered, make sure you still have Z-Wave network coverage. If you are still having issues, visit www.domeha.com/support.

Warranty & Support

If you have questions, our trained Customer Service Department is happy to assist you 24 hours a day, 7 days a week. Contact Dome Customer Service as follows: • In North America dial: 1-855-249-1754 • Email Dome at support@domeHA.com
DO NOT RETURN THIS PRODUCT TO THE STORE OR WEBSITE FROM WHICH IT WAS PURCHASED
If you believe the product is defective, has a missing or broken part or are having difficulty with it please contact Dome as listed above for a quick and efficient solution to the problem.
Legal Notices: This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
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 instructions, 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 or more of the following measures: Reorient or relocate the receiving antenna; increase the separation between the equipment and the 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.
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.
Elexa Consumer Products, Inc. (”ECP”) warrants to the original retail purchaser (”Purchaser”) that the DOME Window/Door sensor (the “Product”) will be free of defects in materials or workmanship under use for one (1) year from the date of purchase (the “Warranty period”).
For the Purchaser only, if the Product fails to perform as specified during the Warranty Period due to defective parts or faulty workmanship, ECP will repair or replace the defective or damaged parts of the Product. Normal wear and tear is not covered nor is abnormal use, misuse, mishandling, faulty installation, improper shipping, damage caused by disasters such as fire, flood or earthquake, neglect, accident or tampering. This warranty covers only normal use in the United States or Canada.

To obtain warranty service during the Warranty Period, call Dome Customer Service (1-855-249-1754) or email: support@domeHA.com for instructions on sending damaged parts and documentation for a Return Material Authorization (RMA). Products returned to ECP for repair or replacement without authorization will be returned at the sender’s expense. All warranty claims must be accompanied by a legible copy of the original receipt showing date and details of purchase. The RMA number must be clearly written on the side of the shipping container in which you return the Product or defective parts. Unless otherwise instructed by ECP, the Product must be sent freight prepaid to the following address:

Elexa Consumer Products, c/o Promac,
1153 Timber Dr., Elgin, IL 60123

ECP will repair or replace the defective parts and return them at ECP’s cost by a shipping method selected by ECP. When contacting ECP to obtain an RMA, Purchaser may request expedited return shipping at Purchaser’s expense.
THIS WARRANTY IS NOT TRANSFERABLE, AND, TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW IS IN LIEU OF ALL OTHER WARRANTIES, REPRESENTATIONS AND CONDITIONS, EXPRESSED OR IMPLIED, STATUTORY OR OTHERWISE, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NO OTHER PERSON OR REPRESENTATIVE IS AUTHORIZED TO MAKE ANY OTHER WARRANTY ON BEHALF OF ECP OR ASSUME FOR ECP ANY OTHER LIABILITY IN CONNECTION WITH THE SALE OF THIS PRODUCT. IN NO EVENT WILL ECP BE LIABLE FOR ANY DAMAGES, INCLUDING BUT NOT LIMITED TO INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PRODUCT, INCLUDING DAMAGES DUE TO ECP’S NEGLIGENCE.
THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE AND COUNTRY TO COUNTRY.

This marking on the product, accessories or literature indicates that the product and its electronic accessories should not be disposed of with other household waste.
To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.
Household users should contact either the retailer where they purchased this product, or their government office, for details of where and how they can take these items for
environmentally safe recycling.
Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with
other wastes for disposal.
This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/66. If batteries are not properly disposed of, these substances can cause harm to human health or the environment.