Chime+Siren Manual

Product Overview

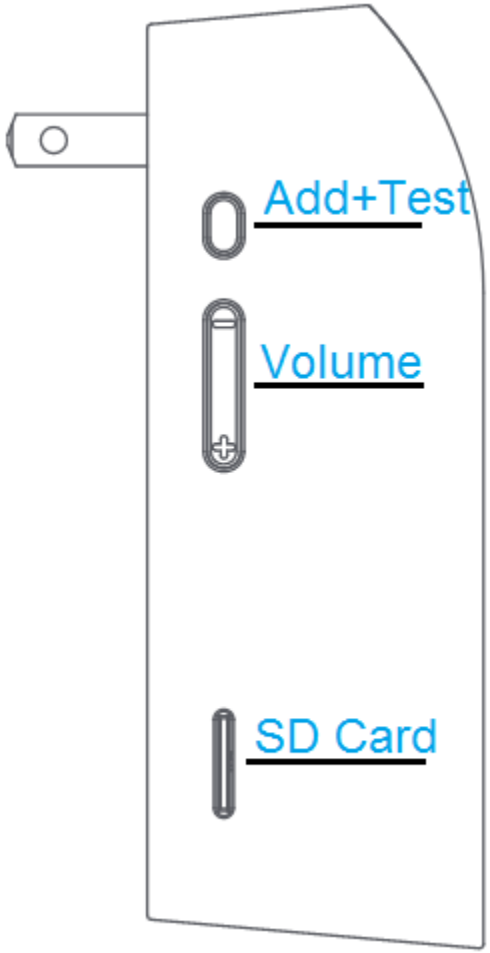
- Z-Wave+™ enabled device which provides open/closed position status
- Transmits open/closed status of eight wired inputs
- Reports tamper condition when cover is open

Product Specifications

- For indoor use only
- Operating frequency: 908.42, 916 MHz
- Operation range: Up to 100 feet (30.5 meters) line-of-sight
- Operating temperature: 0° – 49°C, 32° – 120°F (ambient temperature)
- Line Powered 120v AC 60Hz US
- 24-hour battery backup.

Adding via SmartStart

To add via SmartStart, you will need the device's DSK QR-Code which is located on the back side of the device, on the packaging, and on a leaflet within the packaging. Apply power to the device by inserting the device into a wall receptacle, and the device will go into SmartStart inclusion mode. While in this mode, the sensor can be added to a Z-Wave controller that supports SmartStart. Please refer to the inclusion controller's manual for activating SmartStart.



Adding to a Z-Wave Network (Classic Inclusion Method)

Make sure the device has power. Press the Add/Test Button which is the smaller of the two buttons, and the device will enter classic inclusion mode which implements both classic inclusion with a Node Information Frame, and Network Wide Inclusion. During Classic Inclusion mode, the Green LED will blink three times every three seconds. When Classic inclusion times-out, the device will blink red and green.

Led behavior for Inclusion	Blink Pattern
Smart Start Started	Green LED Three Times
Classic Inclusion Started	Green LED Three Times every three seconds.
Classic Inclusion Timed-Out	Green and Red several times.
Inclusion Successful (Authenticated S2)	Green LED on solid
Inclusion Not Successful (Self-Destruct)	Red LED on solid

Removing a Sensor from a Z-Wave Network

To remove the device, place the controller into Remove or “Z-Wave Exclusion” mode. Press the smaller of the two buttons (Add/Test) following the same procedure to add for removal. Upon successful removal, the device’s red led will come on solid for 1 second. Note: Any Z-Wave Inclusion Controller can remove a Z-Wave device regardless of manufacturer or which network the device is currently added to.

Battery Backup

The device is equipped with a non-user serviceable lithium-ion 24-hour battery backup to keep the device alive and active in the Z-Wave network for up to 24-hours.

What is Z-Wave?

The Z-Wave protocol is an interoperable, wireless, RF-based communications technology designed specifically for control, monitoring and status reading applications in residential and light commercial environments. Mature, proven and broadly deployed (with over 35 million products sold worldwide), Z-Wave is by far the world market leader in wireless control, bringing affordable, reliable and easy-to-use 'smart' products to many millions of people in every aspect of daily life. Certified Z-Wave devices regardless of manufacturer can work together to form a Z-Wave mesh network. Always on Z-Wave devices can act as repeaters in the mesh increasing range and redundancy.

For a more complete look at Z-Wave technology for non-technologists, and to learn more about Z-Wave's role as a key enabling technology for the Internet of Things and connected objects, please visit www.z-wave.com.

Z-Wave Device Class and Command Class Information

This Z-Wave sensor is a Z-Wave generic Device Class of GENERIC_TYPE_AV_CONTROL_POINT (0x03), and a specific device class of SPECIFIC_TYPE_SOUND_SWITCH (0x01).

Manufacturer Specific

Manufacturer ID: MFG_ID_ECOLINK

Product Type: 0x0007

Product ID: 0x3975

Factory Default

To restore the device back to factory settings and remove it from any Z-Wave network. Remove the device from power-outlet. Hold the Add/Test button while re-inserting siren into power-outlet and continue to hold Add/Test button for 10 seconds. During the 10 seconds of continuing to hold the Add/Test button the green LED with flash, and after 10 seconds the red LED will come on solid for 1 second indicating that the factory default of the device has been successful, and the device is ready to add back into a Z-Wave network.

Association

This sensor has one Association group (Lifeline) with only one node for that group. Group one is a lifeline group who will receive unsolicited messages relating to AC and Battery power notifications, and Device Reset Notifications.

Network Wide Inclusion

This sensor also supports Network Wide Inclusion such that the Sensor can be included into the Z-Wave network over the mesh network and not directly near the main controller. This mode is automatically activated after regular inclusion was not successful.

Test Mode

While the device is included into a network, the learn button can be used to test the Z-Wave connection. It will transmit a System Heartbeat notification to the node configured in Association Group 1. If the device receives an ACK + Supervision, the Green LED will turn on solid, otherwise the Red LED will turn on solid, and the device will then send a Wake-Up Notification.

Mapping of the Basic Command Class

The Chime+Siren has the Basic Command Class mapped such that a Basic Set of 0x00 is always off. A Basic set of 1 is sound 1; 2 is sound 2, 5 is sound 5, etc. Finally a Basic Set of 0xFF is mapped to the primary sound which is either a siren or chime sound.

Z-Wave Command Classes

Command Class Name	**Version**	**Allowed unsecure when Included with S2 Authenticated/Unauthenticated**	**Allowed when Not included with S2**	**Comments**	**Encapsulated with Supervision When included with S2 and Enabled With Configuration**
Association	2	No	Yes		NA
Association Group Information	1	No	Yes		NA
Device Reset Locally	1	No	Yes	Device will factory reset when button us held as a user inserts siren into AC power then held for 10 seconds.	No
Firmware Update Meta Data	5	No	Yes	3 targets: The Z-Wave module, the STM32, and the external flash for sounds.	NA
Indicator	3	Yes	Yes		No
Manufacturer Specific	1	Yes	Yes		NA
Multi Channel Association	3	No	Yes		NA

Powerlevel	1	No	Yes		No
Security 2	1	Yes	Yes	Support Authenticated & Unauthenticated	NA
Supervision	1	No	Yes		NA
Transport Service	2	Yes	Yes		NA
Version	2	Yes	Yes		NA
Z-Wave Plus Info	2	Yes	Yes		NA
Basic	2	No	Yes	Basic Set of 0 to 255 maps to 0: off, and 1-255 enumerated sounds where 255 is a Siren sound. Any Report sent from the Siren is mapped 0: off and 255: Sound playing.	NA
Notification	8	No	Yes		Yes
Configuration	4	No	Yes		NA
Sound Switch	1	No	Yes		No

Configuration Command Class

Parameter	Name	Description	Default	Min	Max
1	Swap Siren and Chime Sound mapping.	0: A Basic Set of 0xFF starts playing Siren. 1: A Basic Set of 0xFF starts playing Chime.	0	0	1
2	Periodic heartbeats	The number of seconds between automatic Heartbeat Notifications.	3600	120	86400
3	Encapsulate Unsolicited Notifications/Reports in Supervision	Encapsulate Unsolicited Notifications in Supervision Get requests. 0: Disabled 1: Enabled	0	0	1
4	Sound Volume	Sound volume as a percentage for non-emergency sounds.	100	0	100
5	Total Number of Sounds Available	Read only	100	0	100

Notification Types

The Chime+Siren Implements two notification types for Power Management and System level notifications which are sent unsolicited to the Lifeline Association Group 1.

	Name	Value	Description
Power Management (0x08)	Mains status	0x02	AC mains disconnected
	Mains status	0x03	AC mains re-connected
	Battery load status	0x0C	Battery is charging
	Battery level status	0x0D	Battery is fully charged

	Backup battery level status	0x10	Back-up battery is low
System (0x09)	System Software Failure (Manufacturer Proprietary Failure Code Provided)	0x04	Failure codes-> 0x33 Watchdog Reset on the Z-Wave Module 0x55 Watchdog Reset on the STM32
	Heartbeat	0x05	This is sent out periodically as configured by the Configuration command class.

Sounds

There are 14 included sounds within the Chime+Siren, and the device can play sounds from the SD card either overriding the build-in sounds or adding to them.

Sounds are played with the Sound Switch Command Class, the Basic Command Class, and optionally with the Indicator Command Class. Volume is controlled with the buttons, the Configuration Command Class, and the Sound Switch Command Class.

When a sound is played with the Basic Command Class and Indicator Command Class, then it plays at the current configured volume level.

Sound Number	*Name*	*Description*
1/255	siren	Intrusion Alarm
2	chime_front_door	Front Door Opening sound
3	chime_back_door	Back Door Opening Sound
4	chime_auxillary_door	Side Door Opening Sound
5	chime_window	Window Opening

6	doorbell	DoorBell Sound
7	error	Action Canceled Sound
8	Exit_delay	A loud chirp every second for 30 seconds then every half second forever or another 30 seconds.
9	entry_delay	A constant tone.
10	away	Security panel in away mode.
11	stay_home	Security panel in Stay/home mode where the PIRs are not active.
12	smoke_alarm	UL Specified
13	co_alarm	UL Specified
14	disarmed	Happy sound.

Manually Adjusting the Volume

The volume buttons on the side of the device can override the volume. Press the volume + to make the volume louder and – to make it quieter. Emergency sounds like the siren will still play at full volume regardless of the current volume setting.

SD-Card

To override the built-in sounds via the SD-Card format an SD-card with a FAT16 filesystem. The sounds on the SD card must start with a decimal number followed by the name of the sound with a .wav file extension. The encoding for the wav file must be mono TBD.

S2 Encryption

The device uses industry standard elliptic key cryptography to encrypt all sensitive communications. The DSK code on the device in the QR code and printed below it is used for authenticating the encrypted command classes in the table above. A Security Enabled Z-Wave Controller must be used in order to fully utilize the product.

FCC Compliance Statement

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.
This equipment has been tested and found to comply with the limits for 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 or more of the following measures:

- Re-orient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment to an outlet on a different circuit from the receiver
- Consult the dealer or an experienced radio/TV contractor for help.

Warning: Changes or modifications not expressly approved by Ecolink Intelligent Technology Inc. could void the user's authority to operate the equipment.
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.

C'et appareil est conforme la norme d'Industrie Canada exempts de licence RSS. Son fonctionnement est soumis aux deux conditions suivantes: (1) c'et appareil ne peut pas provoquer d'interférences, et (2) c'et appareil doit accepter toute interférence, y compris les interférences qui peuvent causer un mauvais fonctionnement de la dispositif.

FCC ID: XQC-ISZW7ECO IC: 9863B-ISZW7ECO

Limited Warranty

This limited warranty is provided by Ecolink Intelligent Technology ("Ecolink") to you as the original purchaser of the product. Ecolink warrants this product to be free from defects in material and workmanship for a period of one (1) year from the date of original purchase. The determination of whether the product is defective shall be made by Ecolink in its sole discretion with consideration given to the overall performance of the product. If Ecolink determines that any product is defective, Ecolink's sole obligation and your sole and exclusive remedy shall be that Ecolink will replace the product.

This warranty does not apply to damage caused by shipping or handling, or damage caused by accident, abuse, misuse, misapplication, ordinary wear, improper maintenance, failure to follow instructions or as a result of any unauthorized modifications. The foregoing limited warranty is and shall be in lieu of any and all other warranties, whether expressed or implied and of all other obligations or liabilities on the part of Ecolink. Ecolink neither assumes responsibility for, nor authorizes any other person purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other warranty or liability concerning this product. It is recommended that the customer check their equipment on a regular basis for proper operation2012/19/EU (WEEE directive): Products marked with this symbol should not be mixed with general household waste. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points.

Designed in Carlsbad, CA www.discoverecolink.com