User Manual

Door Bell

Model: SGZ312

Door Bell Series

20141111
FW V2.2/V2.3
HW V1.1

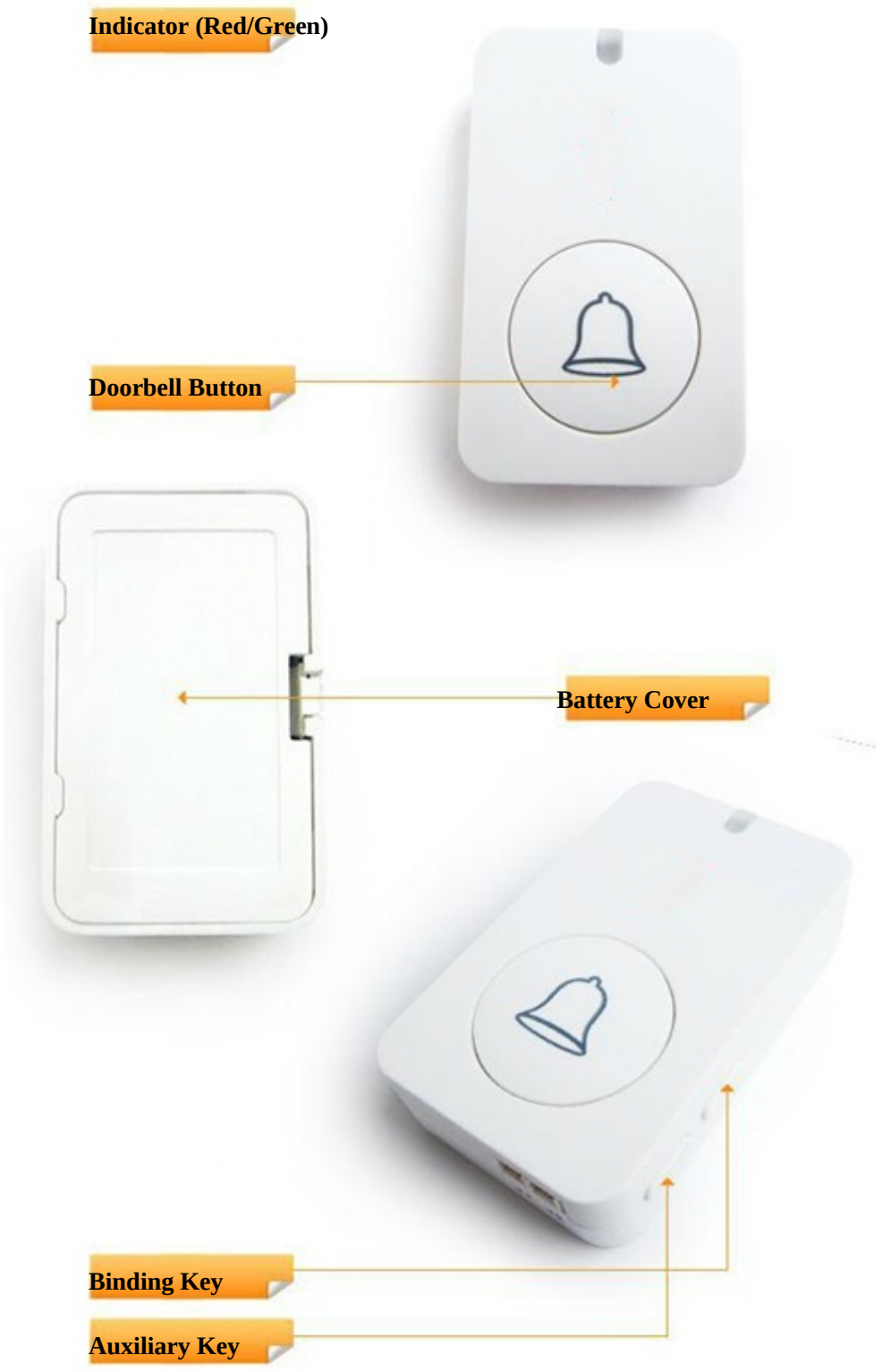
1. Introduction

ISysmart SGZ312, a Door Bell device, acts as an End Device in ZigBee network. It does not perform permit-join function as a coordinator or a router for other devices to join the network. SGZ312 can be logically bound with a ZigBee enable Warning Device, like Z602A, to work as a door bell button.

What is ZigBee?

ZigBee is a short range wireless transmission technology based on IEEE802.15.4 standard and supports multiple network topologies such as point-to-point, point-to-multipoint, and mesh networks. It is defined for a general-purpose, cost-effective, low-power-consumption, low-data-rate, and easy-to-install wireless solution for industrial control, embedded sensing, medical data collection, smoke and intruder warning, building automation and home automation, etc.

2. Product Appearance



3. Specification

Fully IEEE 802.15.4 compliant

Utilizes 2.4GHz ISM band; up to 16 channels

Power supply: 2 CR2450 button cell batteries. 715 days battery life* Operating consumption: ≤ 43mA

Standby consumption: ≤ 1uA

Up to 100 meters wireless transmission range in non-obstacle space Easy installation and configuration

** Battery life may vary based on operating conditions.*

4. Installation

SGZ312 is powered using two 3V CR2450 button cell batteries. Please follow the instructions for installation. Step1. Remove the battery cover.

Step2. Insert two CR2450 button cell batteries.

Step3. Install the battery cover.

Step4. After SGZ312 is powered, the indicator will flash once.

5. Setting up SGZ312

5.1. Turn On/ Turn Off SGZ312

Under the circumstances SGZ312 is first time used or after resetting, when it is powered on and cannot successfully search a network, SGZ312 will go into turn-off mode. Turn-off mode ensures the minimum power consumption. Under this mode, any other buttons and contacts are not active except the binding key.

When SGZ312 had previously joined a ZigBee network, SGZ312 will go to turn-on mode and is ready to work in the network after powering on it.

Users can also manually turn on or turn off SGZ312 using the following instructions:

A. **Turn it on: Press the *Binding Key* once. The indicator will flash red once, and the device is ready to be used.**
B. **Turn it off: Press the *Binding Key* once. The indicator will flash red 10 times in 5 seconds. Press the *Binding Key* again within 5 seconds to turn the device off. Otherwise, while the key press is not applied within 5 seconds, the device will be still in turn-on mode.**

NOTE1: We recommend that users remove the battery to power off SGZ312 when it is not indented to be used for a long period of time.
NOTE2: After SGZ312 first-time joins a network or re-installs the batteries, it will be activated for 5 minutes.

5.2. Join the ZigBee Network

After SGZ312 is powered on, it will search for an existing ZigBee network and send a request to join the network automatically. While SGZ312 is under the coverage from a coordinator or a router whose permit-join feature is enabled, SGZ312 will be permitted to join the network. Typically, the permit-join period is 1 minute. Please refer to the following steps to complete the join:

Step1. Enable the permit-join function (valid for 60 seconds) of a coordinator or a router (please refer to the user manual of the coordinator or the router to enable the permit-join feature).
Step2. Turn on SGZ312. It will start to search and join the network.

The indicator will flash green 5 times after it is joined successfully. Otherwise, the indicator will not flash. SGZ312 will stop searching and go to turn-off mode when it doesn't find a network to join. Press the *Binding Key* again to turn it on for searching and joining the network.

5.3. Binding

To make SGZ312 work with the Warning Device such SGZ602A, users need to bind the two devices:

Step1. Press and hold the *Binding Key* for 3 seconds to broadcast the binding request. The indicator will flash red once.

Step2. Within 13 seconds, enable the binding feature of the Warning Device.
Step3. The indicator flashes red 5 times after the binding is completed; otherwise, it flashes red 10 times.

5.4. Doorbell

After binding, the Warning Device would generate the doorbell sound and the indicator will flash red once when SGZ312's doorbell button is applied. Without binding, the indicator will not flash.

5.5. Sleeping Mode

SGZ312 is designed to go into sleeping mode for power-saving in some situations:

A. **A. While the device is in the network → the sleeping period is 5 minutes; it will wake up every 5 minutes to keep online.**
B. **B. When it doesn't find a network to join → SGZ312 will go to sleeping mode. It will wake up every 15 minutes to search a network to join.**
C. **C. Once SGZ312 was joined to a network and by any chance the network is no longer existed or the device is out of the network → SGZ312 will wake up every 15 minutes to find the network it joined before.**

It never keeps in sleeping mode and continues to find out a network every 15 minutes. This condition would consume up to 30 times power spending compared to normal-operating status. To prevent this unwanted power consumption, we recommend that users remove the batteries to power off the device.

5.6. Wake up SGZ312

When users would like to setup or acquire data from the device which is in sleeping mode, we have to wake up the device as the following steps:

Step1. Press and hold both *Auxiliary Key* and *Binding Key*.
Step2. After the indicator flashes red twice, release both buttons.

SGZ312 would be in active status for 2 minutes for communication.

5.7. Enroll in the ZigBee Security System

SGZ312 is a Zone device in the ZigBee security system. Right after SGZ312 join the ZigBee network, it will automatically find out a CIE (Control and Indicating Equipment)

A. There is no CIE device or no compatible CIE device in the network → the indicator flashes red twice.
B. There is a compatible CIE device in the network, but it is failed to enroll → the indicator flashes red 4 times. Users can press and hold for 3seconds the *Auxiliary Key* to initiate the registration manually.
C. The enrollment is completed → the indicator flashes red 6 times.

NOTE: Users would better NOT enroll multiple Zone devices at the same time to prevent registration failure.

5.8. HeartBeat Technique

In a security system, it is important that Zone devices report the conditions to the central security unit (the CIE device). To meet this need, ISysmart came up with a technique called "HeartBeat".

Right after SGZ312 enrolls to a security system, it sends a HeartBeat signal to the CIE device. Afterward, it will send HeartBeat data regularly. HeartBeat period supports 30 seconds~168 hours.

5.9. Battery

Low-power report: The working voltage for SGZ312 is 2.1~3.6V DC. When the operating voltage is lower than 2.1V, the indicator will flash red once.

When SGZ312 is enrolled into the CIE → SGZ312 will send a low-power report through Zonestatuschange command.
When SGZ312 is not enrolled into the CIE → SGZ312 will send a low-power report through Alarm command.

5.10. Restore to Factory Setting

While SGZ312 is unable to communicate with its enrolled CIE device or users would like SGZ312 to join a new network, a factory reset is required. To restore it to factory setting, please follow the steps:

Step1. Press and hold both *Auxiliary Key* and *Binding Key* for 5 seconds.
Step2. Until the indicator starts flashing red quickly, release both buttons to complete the reset. Step3. After 20 flashes, SGZ312 will go into the turn-off mode.

After the factory restore, please refer to Chapter 5.1. Turn On/ Turn Off SGZ312 to setup it.

7. Important Maintenance Instructions

Please keep the device in a dry place. Precipitation, humidity, and all types of liquids or moisture can contain minerals that corrode electronic circuits. In cases of accidental liquid spills to a device, please leave the device dry properly before storing or using.

Do not use or store the device in dusty or dirty areas.

Do not use or store the device in extremely hot temperatures. High temperatures may damage the device or battery.

Do not use or store the device in extremely cold temperatures. When the device warms to its normal temperature, moisture can form inside the device and damage the device or battery.

Do not drop, knock, or shake the device. Rough handling would break it. Do not use strong chemicals or washing to clean the device.

Do not paint the device. Paint would cause improper operation.

Handle your device, battery, and accessories with care. The suggestions above help you keep your device operational. For damaged device, please contact the authorized service center in your area.