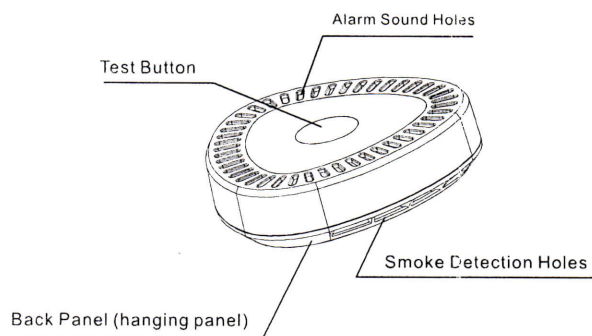


# ES61\_ZWave Smoke Sensor User Guide

## I. Introduction

ES61\_Zwave is a battery powered independent photoelectric smoke sensor, mainly used for detecting surrounding smoke concentration. It will make loud audio alert when the concentration exceeds its alarm threshold, and send alarm signal to Control Panel at the same time. The Smoke Sensor designed with beautiful appearance and easy to operate, supporting tamper alarm and real time battery level monitoring functions etc. Besides, with low power consumption design, its battery working life is up to 3 years.



## II. Specification

Model No.: ES61\_Zwave  
Frequency: 868.4MHZ/908.4MHZ  
Working Voltage: 4.5VDC (3PCS AA alkaline battery)  
Working Indicator: Flashing interval 60 seconds  
Working Current: Static Current  $\leq 50\mu A$ ; alarm current  $\leq 150mA$   
Sensitivity: 1%~3%/FT (0.14~0.43dB/m)  
Alarm Indicator: LED status indicator+ buzzer  
Alarm Volume:  $\geq 85dB$  (at 3m distance)  
Output Signal Type: Alarm report, tamper alert, battery level status, heartbeat report  
Working Temperature & Humidity:  $-10^{\circ}C \sim 50^{\circ}C$ ;  $\leq 95\%RH$  no condensation  
Dimension: 130\*130\*35 mm (L\*W\*H)  
Weight: 260g (include batteries)

## III. Installation

### 1. Batteries

Open 3 battery covers, their red warning columns will bounce afterwards; respectively insert batteries into battery compartments with right polarity and then put back their covers; Smoke Sensor should beep once and start its self-test, it will enter normal working state when it beeps twice again within 20 seconds.

Note: any operation won't be allowed before installing batteries.

### 2. Smoke Sensor Installation

- 1) Rotate the back cover and remove from the main body, as picture below
- 2) Fix the back cover with screws on an appropriate installation position
- 3) To finish installation by reinstalling the main body on the back cover



### 3. Test

- 1) Recommend testing the Smoke Sensor once per month; before test, please note its linkage device to avoid some unnecessary linked response.
- 2) Press the test button, the Smoke Sensor will sound and its alarm indicator lights up, the linkage device will send alarm response.

## IV. ES61-ZWave Operation

### 1. Add & Remove

Add: enter the Inclusion Mode of gateway, and press the tamper switch 3 times within 1.5s, then the Smoke Sensor will stay in enrollment state until successfully enrolled into network or enrollment time out after 30s.

Remove: enter the Exclusion Mode of gateway, and press the tamper switch 3 times within 1.5s, then the Smoke Sensor will be removed after a period of time.

### 2. Association Groups Description

The sensor has 2 associations Inclusion Mode in groups, Lifeline group can support 1 device only, Group 2 can support 2 devices.

It will send "NOTIFICATION\_REPORT" to the device in Lifeline group when the Smoke Sensor is triggered /recovered; tamper switch is triggered / recovered. When in low battery status, Smoke Sensor will send "BATTERY\_REPORT" to Lifeline group device periodically.

The Smoke Sensor will send "DEVICE\_RESET\_LOCALLY\_NOTIFICATION" to Lifeline group device when the device recovers to factory settings.

When the Smoke Sensor is triggered, it will send "BASIC SET" command to control these devices in Group2.

### 3. Restore Factory Settings

Press the anti-tamper switch for 6 times within 2.5 seconds to restore factory settings.

### 4. Wake-up Operation

#### a) Manual Wake-up

Quickly press tamper switch once, the Smoke Sensor will automatically send wake-up information, and there will be 10s after wake-up to receive gateway setting information.

#### b) Automatic Wake-up

Default time of automatic wake-up is 24 hours, and there will be 10s after wake-up to receive gateway setting information, the max automatic report time = 24 hours, minimum=30min

### 5. Lifeline Group

a) When the Smoke Sensor is triggered or recovered, it will send "Binary Sensor Report" and "Notification Report" commands to the device under Lifeline group.

When Smoke Sensor is triggered:

Sensor Binary Report, Value = 0xFF, Type = 0x02

Notification Report, Notification Type = 0x01, Event = 0x01

When Smoke Sensor is recovered:

Sensor Binary Report, Value = 0x00, Type = 0x02

Notification Report, Notification Type = 0x01, Event = 0x00

b) When tamper switch is triggered or recovered, the Smoke Sensor will send "Sensor Binary Report" and "Notification Report" command to the device under Lifeline group.

Tamper Triggered:

Sensor Binary Report, Value = 0xFF, Type = 0x08

Notification Report, Notification Type = 0x07, Event = 0x00

Tamper recover (press tamper switch for 0.5s):

Sensor Binary Report, Value = 0x00, Type = 0x08

Notification Report, Notification Type = 0x07, Event = 0x00

#### c) Low Battery Report: Battery Report

When the Smoke Sensor is wake-up from sleep mode, it will check its battery status; once low battery, it will send Battery Report command to the device under Lifeline group every hour;

Battery Report, Battery Level = 0xFF

### 6. Association Group2

If there is any device under Association Group2, the Smoke Sensor will send "BASIC SET" command to control those devices when the Smoke Sensor is triggered. For example: when the Smoke Sensor is triggered, it sends adjustable parameter "BASIC SET" command to a lamp under Group2, you can adjust the lamp's luminance through the parameters of this command; if the set light-up time out (see the Configuration Description), the sensor will send "BASIC SET" command to turn-off the lamp.

When Smoke Sensor is triggered:

[Command Class Basic, Basic Set, Value = 0xFF (default 0xFF, configurable, see the Configuration Description)]

When light-up time out:

[Command Class Basic, Basic Set, Value = 0x00]

### 7. Configuration Description

#### a) "Basic Set" configuration

If there is any device under Association Group2, the Smoke Sensor will send "Basic Set = value" command to control that device when the Smoke Sensor is opened. "Value" configuration rule is as below:

Function	Parameter	Byte	Range	Default
Basic Set Level	1	1	1-100 or 0xFF	0xFF

b) Turn Off Light Time Configuration

If there is any device under Association Group2, the Smoke Sensor will send "Basic Set = value" command to Group2, and send "Basic Set = 0x00" command to turn-off light after " t" seconds,Set value = "t", means to send Basic Set command after "t" seconds.

Function	Parameter	Byte	Range	Default
Turn Off Light Time	2	1	1-120	20

### Z-Wave Supportive Commands

Generic Deice Type =

GENERIC\_TYPE\_SENSOR\_BINARY

Specific Device Type =

SPECIFIC\_TYPE\_ROUTING\_SENSOR\_BINARY

Support Command Class =

COMMAND\_CLASS\_ZWAVEPLUS\_INFO\_V2

COMMAND\_CLASS\_ASSOCIATION\_V2

COMMAND\_CLASS\_WAKE\_UP\_V2

COMMAND\_CLASS\_BATTERY

COMMAND\_CLASS\_ZWAVEPLUS\_INFO\_V2

COMMAND\_CLASS\_ASSOCIATION\_GRP\_INFO

COMMAND\_CLASS\_NOTIFICATION\_V4

COMMAND\_CLASS\_SENSOR\_BINARY\_V2

COMMAND\_CLASS\_MANUFACTURER\_SPECIFIC\_V2

COMMAND\_CLASS\_VERSION\_V2

COMMAND\_CLASS\_POWERLEVEL

COMMAND\_CLASS\_DEVICE\_RESET\_LOCALLY

Commands to Control Other Devices:

COMMAND\_CLASS\_BASIC

### 8. Cautions

Our products have been quite stable in performance, but as the product itself low point

transmission capacity and conditional application, it still has limits in usage.

Following are the

situations that may occur:

a) Indoor environmental restrictions, such as co-frequency interference, complicated

geographical environment of communication etc

b) Detectors low voltage

c) Not standard Z-Wave Gateway

Warning: If the problems caused by user's incorrect operation, our company will not be responsible for it!

This product can be included and operated in any Z-Wave network with other Z-Wave certifiid devices from other manufacturers and/or other applications. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network