Ei600ZW – Z-Wave Module for 10 Year Smoke Sensor with Siren

Quick Start

This device is a combination of a Z-Wave sensor (smoke sensor) and a Z-Wave actuator. Pressing the button 'Inclusion Button' for one second adds (includes) and removes (excludes) the device from/to the Z-Wave network.

Please refer to the chapters below for detailed information about all aspects of the product.

Product description

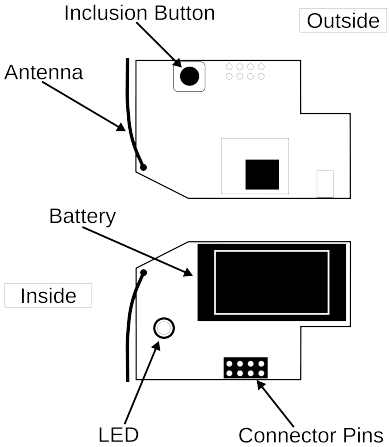
This product combines a certified '10 year' stand-alone smoke detector with a plug-in Z-Wave module to form a wirelessly reporting smoke sensor plus wirelessly controllable indoor siren. The smoke detector is certified by the VdS for Q quality and DIN EN 14604 and satisfies all contemporary legal requirements.

The High-End 10 year smoke detector offers a test button conveniently accessible even with a broom stick when mounted on the sealing. The smoke chamber is monitored electronically to avoid any malfunction and wrong alerts. The device will also report its End of life to make sure it is getting replaced on time.

The device is a secure Z-Wave Plus device and can be used in one wireless Z-Wave network with other certified devices regardless of origin and brand. It supports secure communication if the central controller supports secure communication as well. Even if included securely the device is able to communicate unsecured with devices included unsecure using the association groups 2 and 3.

Installation Guidelines

Please refer to the installation guide of the smoke sensor for information about how and where the smoke sensor should be installed. The installation guide complies with the norm DIN EN 14676.



- The first step is to mount the mounting base on the desired place in the home using screws.
- Remove the battery isolation strip from the wireless module. The red LED will start blinking.
- Include the Smoke Sensor into your existing Z-Wave based Smart Home Network using the 'Inclusion button'.
- Place the Smoke Detector on the mounting base and turn clockwise. Now the Smoke detector is armed.
- Battery Change: The battery of the wireless module will be empty much earlier than the 10 years soldered in battery of the Smoke Sensor. To replace the battery, remove the Smoke detector, pull off the wireless module from the smoke sensor. Then you can replace the 1/2 AA battery and re-plug the wireless module.

Behavior within the Z-Wave network

On factory default the device does not belong to any Z-Wave network. The device needs to join an existing wireless network to communicate with the devices of this network. This process is called **Inclusion**. Devices can also leave a network. This process is called **Exclusion**. The primary controller of the Z-Wave network initiates both processes. This controller will be turned into exclusion respective inclusion mode. Please refer to your primary controllers manual on how to turn your controller into inclusion or exclusion mode. Only if the primary controller is in inclusion or exclusion mode, this device can join or leave the network. Leaving the network - i.e. being excluded - sets the device back to factory default.

If the device already belongs to a network, follow the exclusion process before including it in your network. Otherwise inclusion of this device will fail. If the controller being included was a primary controller, it has to be reset first.

Pressing the button 'Inclusion Button' for one second includes the device. If the button is pressed for at least 2 seconds the inclusion will be done without the (*Security Command Class*). A single click on the button will exclude the device.

Operating the device

In case smoke is detected by the smoke detector the device will sound and the wireless module will issue a Z-Wave alarm command to the main controller and other associated devices. The wireless module will also report a low (wireless module) battery warning and a tamper alarm on and off when the mains device is place on or removed from the mounting base. Please note that the battery level of the main detector is not reported since this battery can't be replaced anyway. The end-of-life indicator serves the same purpose.

Note: All communication of the wireless module is performed with application level security if the device was included securely and all communication partners support secure communication as well. In case a non-secure device is associated for switching on smoke alarm, the smoke detector will detect this and change its communication style with this very device to non-secure. This process happens one time and will take about 20 seconds. This delay will happen on first communication only.

The siren can be used for other alarm indication. For this reason the device will be shown at graphical user interface as a simple on/off switch. Turning on this switch start the siren, turning it off will stop the noise. The generic siren alarm has a different acoustic pattern than the permanent sound caused by smoke. The configuration parameters 1 and 2 define the sequence of the sound.

Factory reset

To do a factory reset press the button on the bottom of the device for at least 10 seconds. This procedure should only be used when the primary controller is inoperable.

Firmware Update

Once the firmware update process has started double click the Z-Wave button to confirm firmware update process.

Alarm Messages

The device will issue the following (unsolicited) alarm messages:

- **Smoke Detected** (this message will also be issued when the Test button is pressed
- **Low Battery Alarm** (when the battery of the wireless modules goes low)
- **Tamper Detected** (on, when the smoke detector head is removed from the base; off, when the detector head is mounted to the base)
- **End of Life** (issued, when the Detector Main Head has reached its end of life after 10+ years.)

Node Information Frame

The Node Information Frame is the business card of a Z-Wave device. It contains information about the device type and the technical capabilities. The inclusion and exclusion of the device is confirmed by sending out a Node Information Frame. Beside this it may be needed for certain network operations to send out a Node Information Frame.

A simple click on the 'Inclusion Button' sends a NIF.

Associations

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 a common wireless command.

Association Groups:

1	Lifeline (max. nodes in group: 10)
2	Alarm Reports (max. nodes in group: 10)
3	Switching Command when Alarm (max. nodes in group: 10)

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 200 it 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.

Siren alarm sequence interval (Parameter Number 1, Parameter Size 1) The additional siren is creating a different acoustic signal differentiate from the smoke alarm. This sound is partly on and partly off. This parameter defines the total length of the interval in seconds.

Value	Description
6 — 129	seconds (Default 10)

Siren alarm tone length (Parameter Number 2, Parameter Size 1) The additional siren is creating a different acoustic signal differentiate from the smoke alarm. This sound is partly on and partly off. This parameter defines the total length of the sound versus silence within this interval. Please make sure this value is always smaller (shorter time) than parameter 1 that defines the whole sequence.

Value	Description
1 — 99	seconds (Default 8)

Value of On-Command (Parameter Number 3, Parameter Size 1)

Value	Description
0 — 99	(Default 99)

Value of Off-Command (Parameter Number 4, Parameter Size 1)

Value	Description
0 — 99	(Default 0)

Command Classes

Supported Command Classes

- Basic (version 1)
- Binary Switch (version 1)
- Binary Sensor (version 2)
- Association Group Information (version 1)
- Device Reset Locally (version 1)
- Z-Wave Plus Information (version 2)
- Configuration (version 1)
- Alarm (version 5)
- Manufacturer Specific (version 2)
- Powerlevel (version 1)
- Firmware Update Meta Data (version 3)
- Battery (version 1)
- Association (version 2)
- Version (version 2)

Controlled Command Classes

- Basic (version 1)

Z-Wave Technical Data

Battery Type	1 / 2 AA
Frequency	868/869 MHz (SRD Frequency Band according EN300220)
Wireless Range	up to 100 m outdoor, 40 m in buildings
Explorer Frame Support	Yes
SDK	6.51.6
Device Network Role	Reachable Sleeping Slave (RSS)
Device Type	Sensor
Routing	No
Firmware Version	1.0