



009402

# 10-Year Smoke Detector Manual



## Quick Start

This device is a combination of a Z-Wave sensor (smoke sensor) and a Z-Wave actuator. Please insert the Z-Wave module including battery into the device housing first. Pressing the 'Z-Wave button' includes and excludes the device. It supports secure communication.

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

## 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 automatically meshing smoke sensor plus wirelessly controllable indoor siren. The smoke detector's sensor head is certified with the Q quality label, conforms DIN EN 14604 and satisfies all contemporary legal requirements.

The High-End 10-years smoke detector offers a large test button conveniently accessible even with a broomstick 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.

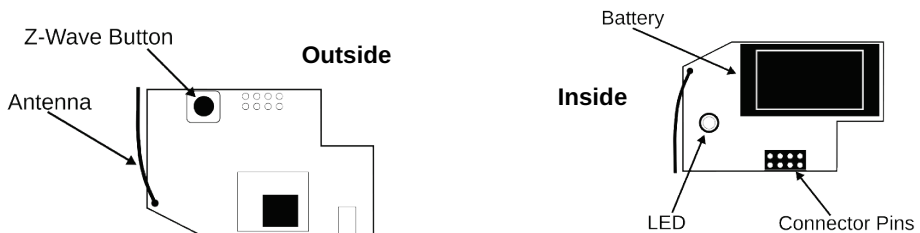
Furthermore, the device can be used as an independent indoor siren within the Z-Wave network, which can alarm in case of detected flood or burglary. Please consider that the additional siren function will influence battery lifetime!

The smoke sensor and the Z-Wave controller communicate via a secure protocol to prevent manipulation.

## 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 Z-Wave 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 replug 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**. Both processes are initiated by the primary controller of the Z-Wave network. This controller will be turned into exclusion respective inclusion mode. Please refer to your primary controller's 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 Z-Wave button includes the device.** If the button is pressed for at least 3 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. A low battery of the wireless module will be reported by the wireless module. 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.*

### Factory Reset

To reset the device keep the Z-Wave button pushed for 10 seconds. After 5 seconds the LED starts flashing and after another 5 seconds there is a short beep signaling the successful reset back to factory defaults.

### 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), indicated by yellow LED
- **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 (NIF) 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 Z-Wave 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: 4)
2	Alarm Reports (max. nodes in group: 4)
3	Switching Command when Alarm (max. nodes in group:4)

## 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 bytes value the same logic applies: Values greater than 32768 may be needed to be given as negative values, too.

### Siren alarm sequence interval (Parameter: 1, Size: 1 byte)

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
3 - 129	Seconds (Default 10)

### Siren alarm tone length (Parameter: 2, Size: 1 byte)

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.

Value	Description
1 - 99	Seconds (Default 8)

### Value of On-Command (Parameter: 3, Size: 1 byte)

Value	Description
0 - 99	(Default 99)

### Value of Off-Command (Parameter: 4, Size: 1 byte)

Value	Description
0 - 99	(Default 99)

## Technical Data

Battery Type	1/2 AA (Please use ER type batteries instead of CR type.)
Frequency	868.4 MHz...869.3 MHz
Wireless Range	Up to 100 m outside, on average up to 40 m inside buildings
Explorer Frame Support	Yes
Device Type	Sensor
Routing	No
Firmware Version	1.0

## Explanation of Z-Wave specific terms

- **Controller** is a Z-Wave device with capabilities to manage the network. Controllers are typically gateways, remote controls or battery operated wall controllers.
- **Slave** is a Z-Wave device without capabilities to manage the network. Slaves can be sensors, actuators and even remote controls.
- **Primary Controller** is the central organizer of the network. It must be a controller. There can be only one primary controller in a Z-Wave network.
- **Inclusion** is the process of bringing new Z-Wave devices into a network.
- **Exclusion** is the process of removing Z-Wave devices from the network.
- **Association** is a control relationship between a controlling device and a controlled device.
- **Wake up Notification** is a special wireless message issued by a Z-Wave device to announce that is able to communicate.
- **Node Information Frame** is a special wireless message issued by a Z-Wave device to announce its capabilities and functions.

## Disposal Guidelines

The product contains batteries. Use only batteries of correct type. Never mix old and new batteries in the same device.

Used batteries contain hazardous substances. Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities. Contact your local government for information regarding the collection systems available. If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging health and well-being.

## Support

If you encounter any problem, please give us an opportunity to address it before returning this product. Most questions regarding Z-Wave wireless communication standard can be answered through the international community at [www.z-wave.info](http://www.z-wave.info).

If your question can't be answered there, please use [www.popp.eu/support](http://www.popp.eu/support) or contact us by email: [info@popp.eu](mailto:info@popp.eu)

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Phone: +44 (0) 20 7419 5726

eMail: [info@popp.eu](mailto:info@popp.eu)

Web: [www.popp.eu](http://www.popp.eu)