

Z-Wave CO Detector

SKU: POPE004407



Quickstart

This is a **secure Z-Wave Device** for **Europe**. To run this device please insert fresh **1 * CR14250** batteries. Please make sure the internal battery is fully charged.

Pressing the "Z-Wave button" for one second adds (includes) and removes (excludes) the device from/to the Z-Wave network.

What is Z-Wave?

Z-Wave is the international wireless protocol for communication in the Smart Home. This device is suited for use in the region mentioned in the Quickstart section. (For more information about frequency regulations please refer to [the frequency coverage overview at Sigma Designs Website](#)).

Z-Wave ensures a reliable communication by reconfirming every message (**two-way communication**) and every mains powered node can act as a repeater for other nodes (**meshed network**) in case the receiver is not in direct wireless range of the transmitter.

This device and every other certified Z-Wave device can be **used together with any other certified Z-Wave device regardless of brand and origin** as long as both are suited for the same frequency range.

If a device supports **secure communication** it will communicate with other devices secure as long as this device provides the same or a higher level of security. Otherwise it will automatically turn into a lower level of security to maintain backward compatibility.

For more information about Z-Wave technology, devices, white papers etc. please refer to www.z-wave.info.



Product Description

This product combines a certified carbon monoxide detector with a plug-in Z-Wave module to form a wirelessly reporting carbon monoxide sensor. The high-end carbon monoxide detector offers a test button conveniently accessible even with a broom stick when mounted on the ceiling. Three colored LEDs on the device indicate Alarm, Error and Battery Level. The Alarm conditions is reported wirelessly using Z-Wave. Beside the Carbon monoxide danger alarm the device will also report a tamper alarm if the sensor is removed from the mounting base. 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.

Prepare for Installation / Reset

Please read the user manual before installing the product.

In order to include (add) a Z-Wave device to a network it **must be in factory default state**. Please make sure to reset the device into factory default. You can do this by performing an Exclusion operation as described below in the manual. Every Z-Wave controller is able to perform this operation however it is recommended to use the primary controller of the previous network to make sure the very device is excluded properly from this network.

Reset to factory default

This device also allows to be reset without any involvement of a Z-Wave controller. This procedure should only be used when the primary controller is inoperable.

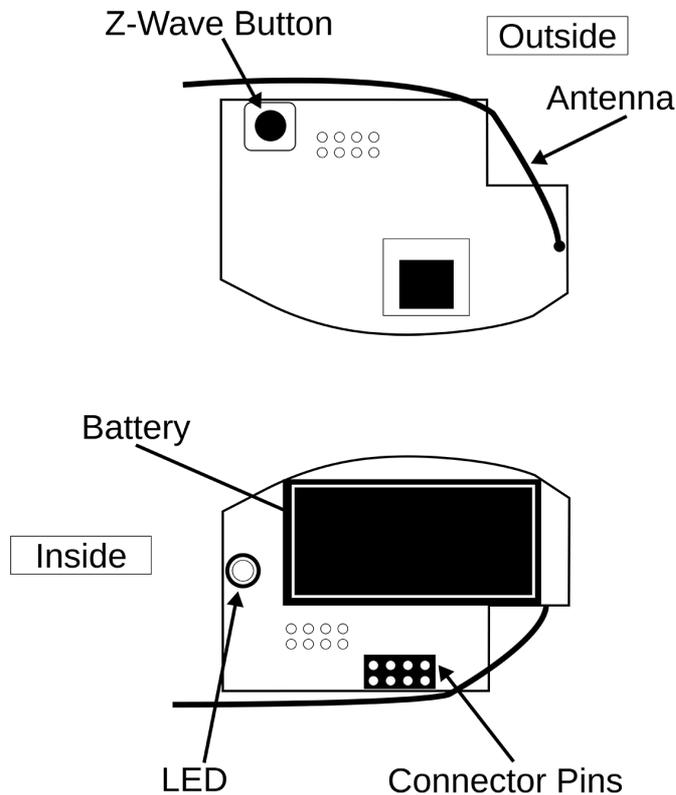
Keep The Z-Wave Button pressed for 10 seconds. the LED will start flashing after 5 seconds

Safety Warning for Batteries

The product contains batteries. Please remove the batteries when the device is not used. Do not mix batteries of different charging level or different brands.

Installation

Please refer to the installation guide of the carbon sensor attached for information about how and where the carbon monoxide sensor should be installed. Please note that the carbon monoxide sensor will **also work stand-alone** even if no Z-Wave network is present



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

Inclusion/Exclusion

On factory default the device does not belong to any Z-Wave network. The device needs to be **added to an existing wireless network** to communicate with the devices of this network. This process is called **Inclusion**.

Devices can also be removed from a network. This process is called **Exclusion**. Both processes are initiated by the primary controller of the Z-Wave network. This controller is turned into exclusion respective inclusion mode. Inclusion and Exclusion is then performed doing a special manual action right on the device.

Inclusion

Pressing the Z-Wave button on the radio module 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).

Exclusion

A single click on the button will exclude the device. A simple click on the Z-Wave button sends a NIF.

Product Usage

Operating the Device

There is no defined level of carbon monoxide that will result in an alarm. The danger of CO is a result of the total level of CO in the air plus the duration of exposure. A Z-Wave alarm will be sent out when one of the following conditions were met:

- CO level above 43 ppm for a duration of 60 minutes
- CO level above 80 ppm for a duration of 10 minutes
- CO level above 150 ppm for a duration of 2 minutes

The alarm will be sent to the central controller. Additionally, the alarm can be used to switch any other Z-Wave controllable actuator such as a Switch, a Dimmer or even a Door Lock that is placed in association group 2. The wireless module will also report a low (wireless module) battery warning. Please note that the battery level of the main detector is not reported since this battery can't be replaced anyway.

Support for Command Class BASIC

The device supports the generic Z-Wave command class BASIC. The device will ignore any SET command but return the status of the sensor on a GET command (triggered=0xff, idle=0x00).

Alarm Messages

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

- CO Danger 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 CO detector head is removed from the base; OFF, when the detector head is mounted to the base)
- Malfunction (issued, when the detector main head detects a malfunction of CO detection)

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. To issue a NIF execute the following action: Single Click the Z-Wave Button on the bottom side module

Communication to a Sleeping device (Wakeup)

This device is battery operated and turned into deep sleep state most of the time to save battery life time. Communication with the device is limited. In order to communicate with the device, a static controller **C** is needed in the network. This controller will maintain a mailbox for the battery operated devices and store commands that can not be received during deep sleep state. Without such a controller, communication may become impossible and/or the battery life time is significantly decreased.

This device will wakeup regularly and announce the wakeup state by sending out a so called Wakeup Notification. The controller can then empty the mailbox. Therefore, the device needs to be configured with the desired wakeup interval and the node ID of the controller. If the device was included by a static controller this controller will usually perform all necessary configurations. The wakeup interval is a tradeoff between maximal battery life time and the desired responses of the device. To wakeup the device please perform the following action: Single Click the Z-Wave Button on the bottom side module

Quick trouble shooting

Here are a few hints for network installation if things dont work as expected.

1. Make sure a device is in factory reset state before including. In doubt exclude before include.
2. If inclusion still fails, check if both devices use the same frequency.
3. Remove all dead devices from associations. Otherwise you will see severe delays.
4. Never use sleeping battery devices without a central controller.
5. Dont poll FLIRS devices.
6. Make sure to have enough mains powered device to benefit from the meshing

Firmware-Update over the Air

This device is capable of receiving a new firmware 'over the air'. The update function needs to be supported by the central controller. Once the controller starts the update process, perform the following action to confirm the firmware update: Once the firmware update process has started (wakeup first by single push of the Z-Wave button) double click the Z-Wave button to confirm firmware update process.

Association - one device controls an other device

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 the same wireless command wireless command, typically a 'Basic Set' Command.

Association Groups:

Group Number	Maximum Nodes	Description
1	10	Lifeline
2	10	Switching Command when Alarm

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.

Parameter 1: Value of ON-Command

Size: 1 Byte, Default Value: 99

Setting	Description
0 - 99	Send Basic Command by set Alarm

Parameter 2: Value of OFF-Command

Size: 1 Byte, Default Value: 0

Setting	Description
0 - 99	Send Basic Command by reset Alarm

Technical Data

Dimensions	0.1040000x0.1190000x0.0430000 mm
Weight	185 gr
Hardware Platform	ZM5202
EAN	0019962004407
IP Class	IP 20
Battery Type	1 * CR14250
Firmware Version	01.00
Z-Wave Version	04.05
Certification ID	ZC10-16035025
Z-Wave Product Id	0x0154.0x0004.0x0003

Supported Command Classes

- Basic
- Sensor Binary
- Sensor Multilevel
- Association Grp Info
- Device Reset Locally
- Zwaveplus Info
- Configuration
- Alarm
- Manufacturer Specific
- Powerlevel
- Battery
- Association
- Version
- Security
- Firmware Update Md
- Wake Up

Controlled Command Classes

- Basic

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 adding 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.
- **WakeUp Notification** — is a special wireless message issued by a Z-Wave device to announces 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.

Support and Contact

Should 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 users community such as www.z-wave.info and others. If your question can't be answered there, please use www.popp.eu/support or contact us by email: info@popp.eu

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Declaration of Conformity

Popp hereby declares this device complies with the essential requirements and other relevant prescriptions of Directive 1999/5/EC R&TTE. The complete CE declaration can be found on: www.popp.eu/ce.

All questions regarding this declaration of conformity can be directed to the following address: Popp c/o BID GmbH, Neuer Wall 63, 20148 Hamburg, Germany



Disposal Guidelines

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.

