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VIS_ZS6301
CO Detector

Firmware Version : 3.5

Quick Start

S This device is a wireless Z-Wave sensor. Inclusion and Exclusion is confirmed by hitting the program button. Hitting the program button will wake up the device.

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

Product description

Carbon Monoxide (CO) is a tasteless, invisible but very poisonous gas created among others by incomplete burning of burnable material or gas. This device is measuring the CO concentration in the air and issues an alarm when a certain level of CO is exceeded. The device will send an alarm when one of the following conditions are met:

50 ppm for 60 minutes
100 ppm for 10 minute
300 ppm for 3 minutés

Additionally a remote device can be switched. This can be an actuator e.g. opening a door or another alarm device such a siren. The device consists of a mounting base that is screwed to the wall and the actual device is mounted to this base. It is recommended to place the CO sensor on the sealing because CO is lighter than air and will always move upwards. The device is battery-operated and therefore in sleeping mode unless an action is detected. After a programmable sleeping time the device wakes up and sends a status information. After this the unit goes back to sleeping modus. Batteries can be changed without unscrewing the mounting base. The unit has tree colored LED to give visual warning when the battery is low or a CO alarm occurred.

Installation Guidelines
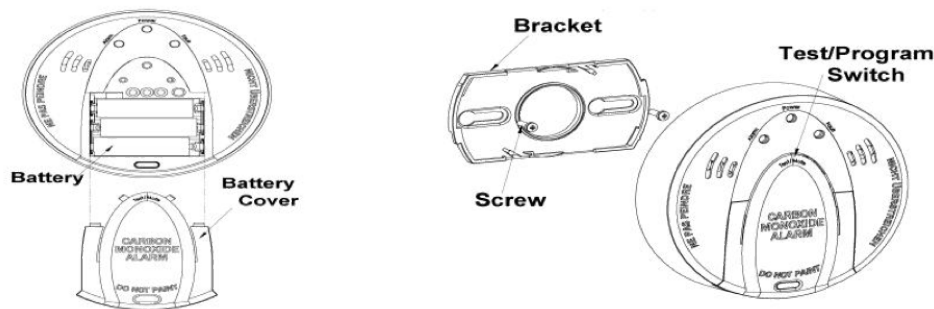
1. Remove the bracket from the detector by rotating it counter-clockwise.
2. Place the bracket where you are going to install the detector. In each of keyhole slots, draw a mark to locate plastic anchor and screw. Using a 3/16-inch (5mm) drill bit, drills two holes at the marks and insert plastic anchor, and attached the bracket by using the screws.
3. Open the battery cover to insert the batteries, and then replace the cover. Fix the detector with bracket by rotating it clockwise.
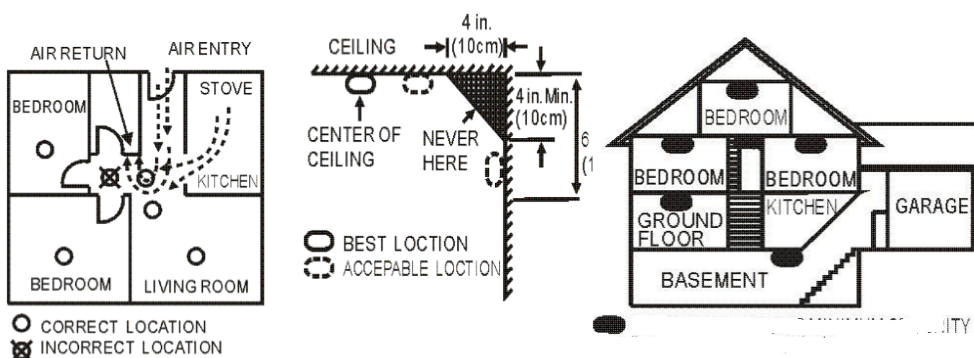
Please follow the recommendations about amount and position of the sensor in your home as given above. Avoid to place the sensor into the angle of walls, prefer positions in the middle of the room.

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 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.

Inclusion and Exclusion is confirmed by hitting the program button.

Operating the device

Power-on Mode: 1) Install the battery into the module 2) The detector will emit a beep in 0.5 seconds and the three LEDs will flash once quickly. 3) Close the bracket. The CO detector will alarm once remove the bracket.

Stand-by Mode: The Green LED flashes one time every 60 seconds.

Alarm Mode (It is the status when the alarm is triggered.): If a certain density of CO is detected, an audible alarm with 4 beeps, pause 5 seconds and 4 beeps will occure. The red LED will flash continuously and rapidly. Meanwhile, the CO detector will send an alarm report (type: CO alarm, state: alarm) to the user's controller and also the CO dectecor will send an alarm report (type: CO alarm, state: No alarm) while the alarm goes off.

Error Mode: If the CO detector beeps once and yellow LED flashes three times every minute, it indicates the CO detector is not working properly. Please require to repair or service.

Low battery warning Mode: The yellow LED will flash once every minute with a "beep" sound.

Low sensitivity Mode: The yellow LED will flash twice every minute with a "beep" sound. It indicates the CO detector has internal problem, please replace the unit.

Tamper Mode: The yellow LED will go solid and the detector will emit a short beep every minute until the CO detector is mounted back to the bracket properly.

End of life signal Mode: The yellow LED will flash four times every minute with a short "beep" sound. It indicates the CO detector is reaching to the end of useful life, please replace with a new unit.

Testing Mode: Test the alarm by pushing test switch until the user hears 4 short beeps and three LEDs flash synchronously in five seconds. Then, the CO detector will send an alarm report (type: CO alarm, state: alarm) to the user's controller and also the CO dectecor will send an alarm report (type: CO alarm, state: No alarm) while the alarm goes off. Please note if the CO detector only beeps once and yellow LED flashes three times every minute, it indicates the CO detector is not working properly. Please require to repair or service.

Battery Power indicator: The detector will report the current status of battery capacity to the user's controller.

Self-Protection Mode: If the cover of detector removed from bracket, after 8 sec the detector will send an alarm report (type:0*02, level:0*FF) to the Z-Wave Interface Controller and the yellow LED will flash continuously and the detector will sound.

Silence Mode: The user could press the test switch to get into silence mode to turn off the alarm temporarily when the CO detector alarms. Meanwhile, the red LED will flash continually. The silence function will automatically turn into normal operation if the CO concentration around the CO detector is still at alarming level after 4 minutes of silence mode.

WARNING: The carbon monoxide sensing unit has only 5-year limited life. For the security issue, we strongly recommend the user to change whole the CO detector after 4-year usage.

Wakeup Intervals - how to communicate with the device?

W 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.

Hitting the program button will wake up the device.

It is possible to set the node ID to 255 to send wakeup notifications as broadcast. In this mode device takes more time to go to sleep and drains battery faster, but can notify all it's direct neighbors about a wakeup.

Node Information Frame

NI 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.

Hitting the program button will send out an Node Information Frame

Associations

A 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	alarm messages (max. nodes in group: 5)

Technical Data

Battery Type	3 * CR123A
Explorer Frame Support	Yes
SDK	4.54
Device Type	Slave with routing capabilities
Generic Device Class	Alarm Sensor
Specific Device Class	Routing Smoke Sensor
Routing	No
FLiRS	No
Firmware Version	3.5