

# WS4913 Series Wireless Carbon Monoxide Alarm

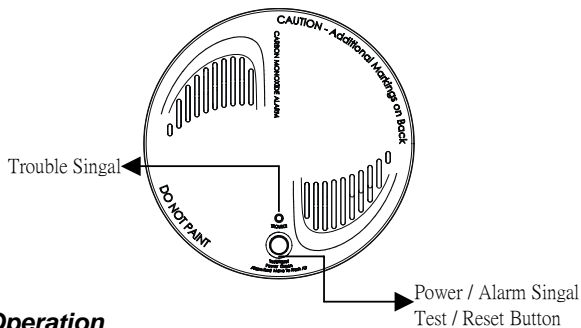
## Installation and Operating Instruction

Read this instruction sheet thoroughly before installation and use of the WS4913 wireless carbon monoxide alarm

### Introduction

The WS4913 is a wireless electrochemical Carbon Monoxide alarm, which is effective for detecting any buildup of carbon monoxide, also known as CO gas, in your home or office. The features of your CO alarm includes:

- (1) Easy to install.
- (2) Monitoring for carbon monoxide in a continuous manner.
- (3) Giving a loud alarm (85 dB) when it detects a buildup of carbon monoxide.
- (4) Having a Test button for you to test the CO alarm anytime.
- (5) Self-diagnostic testing its operative function continuously.
- (6) Complying the requirements of UL Standard 2034, 2075, UL Canada ULC and EU standard EN50291.



### Operation

The green LED flashes approx. once in 60 seconds, which means the unit is receiving power and also indicates it is sensing carbon monoxide level in the air.

### CO alarm

The CO alarm unit will go into alarm when the CO concentration level around the area exceeds the 'alarm' threshold. During an alarm, the red LED light flashes rapidly and buzzer sounds with repeating 4 quick beeps and pause 5 seconds and then 4 quick beeps.

### Tamper

The removal of the CO alarm from the mounting plate initiates a 'tamper' transmission. The horn chirps once in a minute and the yellow LED is steadily on until the unit is mounted back to the plate.

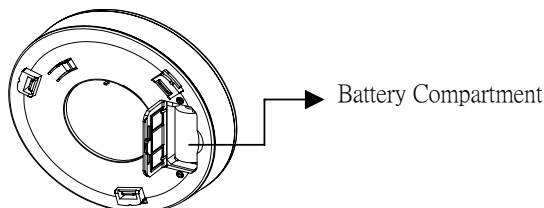
## Wireless Transmissions

**Battery:** The WS4913 is powered by a 3V DC lithium battery.

**▲ WARNING:** Use only battery specified as above mentioned. Use of a different battery may have a detrimental effect on alarm operation.

### Installing/Replacing battery:

- (1) Open the battery cover to expose the battery compartment.
- (2) Remove the old battery and properly dispose of them as recommended by the battery manufacturer.
- (3) Note the polarities of the battery are correctly installed as per the polarity marking indicated on two sides of the battery cover, make sure to carefully seat the red battery warning flag in the recess of the battery compartment.
- (4) Gently close the battery cover. The battery cover of CO alarm will not close if battery is not properly installed.



**▲ Caution:** Constant exposures to high or low temperatures or high humidity may reduce battery life.

The low battery threshold is set so the battery will provide no less than 30 days of operation and at that point the CO alarm will send a 'low battery' signal. If the battery is low, horn will 'horn' once every 60 seconds with yellow LED flash until battery failure. Please replace the battery asap before battery power is completely exhausted.

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## Installation Instructions

### Locations to install your CO alarm

Since CO gas moves freely in the air, the suggested location is in or as near as possible to sleeping areas of the home. The human body is most vulnerable to the effects of CO gas during sleeping hours. For maximum protection, a CO alarm should be located outside primary sleeping areas or on each level of your home. In the figure 1 below, are suggested locations in the home. The electronic sensor detects carbon monoxide, measures the concentration and sounds a loud alarm before a potentially harmful level is reached.

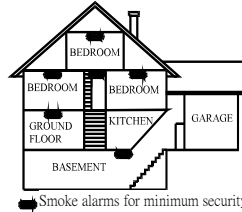


Figure 1: Location for placing CO alarm for A multi-floor

### Do not place the CO alarm in the following areas:

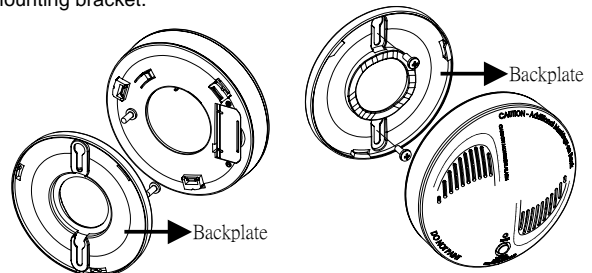
- (a) Where the temperature may drop below 40°F (4.4°C) or exceed 100°F (37.8°C)
- (b) Near paint thinner fumes
- (c) Within 5 feet (1.5 meter) of open flame appliances such as furnaces, stoves and fireplaces
- (d) In exhaust streams from gas engines, vents, flues or chimneys
- (e) Do not place in close proximity to an automobile exhaust pipe; this will damage the Alarm

## Installing your CO alarm

Your WS4913 CO alarm is easy to install to protect you and your family in your home, cottage, cabin and office.

To install the CO alarm (See figure 2 as below) :

1. At the place where you are going to install the alarm, draw a horizontal line six (6) inches long.
2. Remove the mounting bracket from your unit by rotating it counterclockwise.
3. Place the bracket so that the two longest hole slots are aligned on the line. In each of keyhole slots, draw a mark to locate a mounting plug and screw.
4. Remove the bracket.
5. Using a 3/16-inch (5mm) drill bit, drill two holes at the marks and insert wall plugs.
6. Using the two screws and wall plugs (all supplied), attach the bracket to the wall.
7. Line up the side slot of the bracket and the alarm. Push the alarm onto the mounting bracket and turn it clockwise to fix it into place. Pull outward on the alarm to make sure it is securely attached to the mounting bracket.



## Device Enrollment

The 6 digit serial number located on the back of the CO alarm housing must be enrolled into the alarm control panel with Installer programming. Refer to the receiver **Installation Manual** for details.

## Owners Instructions

### You should know about Carbon Monoxide

Carbon monoxide, also known as "CO" by the chemical form, is considered to be a highly dangerous poisonous gas, because it is colorless, odorless or tasteless and very toxic. In general, biochemistry phenomena have shown that the presence of CO gas inhibits the blood's capacity to transport oxygen throughout the body, which can eventually lead to brain damage.

In any enclosed space (home, office, recreational vehicle or boat) even a small accumulation of CO gas can be quite dangerous.

Although many products of combustion can cause discomfort and adverse health effects, it is CO gas which presents the greatest threat to life.

Carbon monoxide is produced by the incomplete combustion of fuels such as natural gas, propane, heating oil, kerosene, coal, charcoal, gasoline, or wood. The incomplete combustion of fuel can occur in any device which depends on burning for energy or heat such as furnaces, boilers, room heaters, hot water heaters, stoves, grills, and in any gasoline powered vehicle or engine (e.g. generator set, lawnmower). Tobacco smoke also adds CO to the air you breathe.

When properly installed and maintained, your natural gas furnace and hot water heater do not pollute your air space with CO. Natural gas is known as a "clean burning" fuel because under correct operating conditions, the combustion products are water vapor and carbon dioxide (CO<sub>2</sub>), which is not toxic. The products of combustion are exhausted from furnaces and water heaters to the outside by means of a fuel duct or chimney.

Correct operation of any burning equipment requires two key conditions:

- An adequate supply of air for complete combustion.
- Proper venting of the products of combustion from the furnace through the chimney, vent or duct to the outside.

Typical carbon monoxide gas problems are summarized here:

- Equipment problems, due to defects, poor maintenance, damaged and cracked heat exchangers.
- Collapsed or blocked chimneys or flues, dislodged, disconnected or damaged vents
- Downdraft in chimneys or flues. This can be caused by very long or circuitous flue runs, improper location of flue exhaust or wind conditions
- Improper installation or operation of equipment, chimney or vents
- Air tightness of house envelop/inadequate combustion of air
- Inadequate exhaust of space heaters or appliances
- Exhaust ventilation/fireplace competing for air supply.

Potential sources of carbon monoxide in your home or office include clogged chimney, wood stove, wood or gas fireplace, automobile and garage, gas water heater, gas appliance, gas or kerosene heater, gas or oil furnace, and cigarette smoke.

### More information about conditions which result in transient CO situations

- Excessive spillage or reverse venting of fuel burning appliances caused by
  - Outdoor ambient conditions such as wind direction and or velocity, including high gusts of wind; heavy air in the vent pipes (cold humid air with extended periods between cycles)
  - Negative pressure differential resulting from the use of exhaust fans.
  - Simultaneous operation of several fuel burning appliances competing for limited internal air.
  - Vent pipe connection vibrating loose from clothes dryers, furnaces, or water heaters.
  - Obstructions in or unconventional vent pipe designs which amplify the above situation.
- Extended operation of unventilated fuel burning devices (range, oven, fireplace, etc)
- Temperature inversions which can trap exhaust gases near the ground.
- Car idling in an open or closed attached garage, or near a home

### Possible symptoms of Carbon Monoxide Poisoning

Carbon monoxide is colorless, odorless, tasteless, and very toxic. When inhaled, it produces an effect known as chemical asphyxiation. Injury is due to the combining of CO with the available hemoglobin in the blood,

lowering the oxygen-carrying capacity of the blood. In the presence of CO gas, the body is quickly affected by oxygen starvation.

The following symptoms are related to CO poisoning and should be discussed with all members of the household so that you know what to look for:

- Extreme exposure: unconsciousness, convulsions, cardio-respiratory failure, death
- Medium exposure: severe throbbing headache, drowsiness, confusion, vomiting, fast heart rate
- Mild exposure: slight headache, nausea, fatigue (similar to "flu-like" symptoms)

Many victims of carbon monoxide poisoning indicate that while they were aware that they were ill, they became so disoriented and confused that they were unable to help themselves by either exiting the building or calling for assistance. Young children and household pets may be the first affected. Exposure during sleep is particularly dangerous, because the victim usually does not awaken.

### Actions to take when CO alarm sounding

**▲ WARNING!!** Actuation of your CO alarm indicates the presence of carbon monoxide ( CO ) which can kill you. If alarm sounds :

- Operate silence button
- Call your emergency services or fire department or 911
- Immediately move to the fresh air –outdoor or by an open door window.

In case of harmful levels of CO gas being detected, your CO alarm M330 will go into a CO alarm mode as mentioned above. in " CO Alarm Mode" Try to take the following necessary actions immediately:

- If there is anyone experiencing the effects of carbon monoxide poisoning such as headache, dizziness, nausea or other flu-like symptoms, call your fire department right away or 911. You should evacuate all the people in the premises immediately. Do a head count to check that everybody is accounted for.
- Do not re-enter the premises until the problem has been corrected and the CO gas has been dispersed out and a safe level is reached.
- If no symptoms exist, immediately ventilate the home by opening windows and doors. Turn off fuel burning appliances and call a qualified technician or your utility company to inspect and repair your problem before restarting appliances.

Normally an activation of the CO alarm indicates the presence of CO gas. However, the CO gas can be extremely fatal, if it is not detected. The source of the CO gas may come from several possible situations, please refer to the list of sources of carbon monoxide in page 1.

**▲ CAUTION!!** This CO alarm will only indicate the presence of CO gas at the sensor. However, you have to be aware that the CO gas may be present in other areas in the premises.

### Actions to take after the problem being corrected

Once the problem about the CO gas presence in the premises has been corrected, the alarm of the CO alarm unit should be off. After waiting for 10 minutes, push the Test button to test the CO alarm unit so that you can make sure that it is working properly again.

### Test and silence your CO alarm

**Follow the test procedure described here or contact your CO alarm unit dealer or installer for testing instructions . DSC recommended that you test the entire alarm system at least one a week to verify the operation of all functions.**

The test/silence button is used to test if the CO alarm is working properly and to mute the unit during alarm.

### Test the unit

Press the test button and you should hear 4 short beeps with a corresponding three LED flashes in 5 seconds, this cycle will repeat one more time.

Familiarize yourself and your family members with this alarm pattern as this testing simulates an actual CO alarm condition.

### Silence the unit :

If the CO alarm is sounding, pressing the test/silence button will have the alarm muted while at the same time red LED keeps flashing. After 4 minutes, if the CO concentration caused the alarm still remains at alerting condition, the CO alarm will reactivate.

### Owners Maintenance

The CO alarm unit is designed to require minimum maintenance,

however, you have to maintain the CO alarm frequently to ensure it is working properly. Few tips are provided for you to take care of your CO alarm:

(a) Use a vacuum cleaner to clean the CO alarm cover once a month, using the soft brush attachment, never use water, cleaners as they may damage the unit.

(b) Press the Test/silence button to test its operating function once every week.

**Never disassemble the CO Alarm; there are no user serviceable parts inside the unit. You may only remove CO Alarm from backplate to replace battery if not serviced by installer. When replacing the battery, follow the instructions specified within the Installation Instructions, Item 3 Install Batteries..**

**▲ CAUTION: This product uses lithium battery, improper handling may result in a HEAT, EXPLOSION or FIRE causing personal injury. DO NOT recharge batteries.. Follow the battery manufacturer's safety instructions. Dispose of used batteries in accordance with the regulations in your area.**

**Never paint the unit. Paint may prevent CO from entering the unit. If you are planning renovations or repainting, contact your installer and ask that the unit be temporarily removed until work is complete.**

### Specifications

WS4913 Series Carbon Monoxide Alarm is engineered to be able to provide alarm sounds with various exposure time at different level of carbon monoxide concentrations as per UL 2034 and EN50291 standards.

**This CO alarm WS4913 meets following mentioned response times :**

At 70ppm , the unit must alarm within 60-240 minutes

At 150ppm, the unit must alarm within 10-50 minutes

At 400ppm, the unit must alarm within 4-15 minutes

### Product Specifications:

Sensor: Electrochemical carbon monoxide sensor

Diameter (base) : 12.5cm

Height(including base): 3.5cm

Power : 3.6V lithium battery , the battery life lasts around 3 years under normal operation condition

Alarm audibility: Over 85dB at 3m

Operation Temperature: -10°C to 40°C

Relative Humidity: 10-95%RH

Low Battery Detection: Low battery 30 days remaining

**Approved Batteries:**

### Alarm indications

The red ,green, yellow LED light and sound turn on and/or off to indicate various situations. There are a few different LED light and sound operations.

**Power on mode:** Three LEDs blink and buzzer beeps for 0.5 second as soon as the battery are installed.

**Stand-by mode:** green LED flashes once in every 60 seconds, which means the unit is receiving power and also indicates it is functioning properly.

**CO Alarm mode:** When the unit sensors CO which is at alarming level , the red LED light flashes rapidly and buzzer sounds loudly with repeating 4 quick beeps and pause 5 seconds and then 4 quick beeps.

**Low battery warning mode :** The yellow LED flashes once in a minute and the buzzer chirps also once in a minute. This warning should last for up to 30 days , but please replace the battery asap before battery power is completely exhausted.

**Malfunction (Error) mode:** The yellow LED flashes three times in a minute and buzzer chirps once in a minute. This indicates the unit is malfunctioned and needs to be replaced.

**Low sensitivity mode:** The yellow LED flashes twice in a minute and buzzer chirps once in a minute. This means unit needs to be replaced.

**End of life signal mode:** The yellow LED flashes four times in a minute and buzzer chirps once in a minute. This indicate the CO alarm unit is reaching the end of this useful life (around 5 years after the unit is purchased), please replace with the new CO alarm.

**Tamper mode :** The buzzer chirps once in a minute and the yellow LED is steadily on .until the CO alarm unit is mounted back to the bracket properly.

**This manual shall be used in conjunction with the installation manual of the alarm control panel . All the instructions specified within that manual must be observed.**

## WARNING AND LIMITATION

**▲ WARNING!!** This product is intended for use in ordinary indoor locations of family living units . It is not designed to measure compliance with Occupational Safety and Health Administration (OSHA) commercial or industrial standards.

Individuals with a medical problem may consider using warning devices which provide audible and visual signals for carbon monoxide concentrations under 30ppm.

The CO alarm is not suitable as a smoke or fire alarm /detector. This CO alarm is not suitable to install in a hazardous location, as defined in the National Electrical Code.

This CO alarm will not work without power. WS4913 series Carbon Monoxide Alarm will not work if the battery power is disconnected or cut off for any reason. Additionally, carbon monoxide must reach the CO alarm unit for the proper performance of CO gas detection.

Carbon monoxide alarms may wear out because they contain electronic parts that fail at any time. Test your CO alarm at least every week (see the section "TEST AND SILENCE YOUR CO ALARM").

### Limited Warranty:

Digital Security Controls warrants that for a period of twelve months from the date of purchase, the product shall be free of defects in materials and workmanship under normal use and that in fulfillment of any breach of such warranty, Digital Security Controls shall, at its option, repair or replace the defective equipment upon return of the equipment to its repair depot. This warranty applies only to defects in parts and workmanship and not to damage incurred in shipping or handling, or damage due to causes beyond the control of Digital Security Controls such as lightning, excessive voltage, mechanical shock, water damage, or damage arising out of abuse, alteration or improper application of the equipment.

The foregoing warranty shall apply only to the original buyer, and is and shall be in lieu of any and all other warranties, whether expressed or implied and of all other obligations or liabilities on the part of Digital Security Controls. Digital Security Controls neither assumes responsibility nor authorizes any other person purporting to act on its behalf to modify or to change this warranty, nor to assume for it any other warranty or liability concerning this product.

In no event shall Digital Security Controls be liable for any direct, indirect or consequential damages, loss of anticipated profits, loss of time or any other losses incurred by the buyer in connection with the purchase, installation or operation or failure of this product.

**Warning: Digital Security Controls recommends that the entire system be completely tested on a regular basis. However, despite frequent testing, and due to, but not limited to, criminal tampering or electrical disruption, it is possible for this product to fail to perform as expected**

**Important Information:** Changes or modifications not expressly approved by Digital Security Controls could void the user's authority to operate this equipment.

### FCC Compliance Statement

**▲ CAUTION:** Changes or modifications not expressly approved by DSC could void your authority to use this equipment.

This equipment generates and uses radio frequency energy and if not installed and used properly, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for Class B device in accordance with the specifications in Subpart C of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference in any residential installation. However, there is no guarantee that interference will not occur in a particular installation . If this equipment does cause interference to television or radio reception, which can be determined by turning the equipment off and on, the user encouraged to try to correct the interference by one or more of the following measures:

Re-orient the receiving antenna

Relocate the alarm control with respect to the receiver

Move the alarm control away from the receiver

Connect the alarm control into a different outlet so that alarm control and receiver are on different circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the FCC helpful "How to identify and resolve Radio/Television Interference Problems", this booklet is available from the U.S. Government Printing Office, Washington , D.C, 20402, Stock#004-000-00345-4.

Industry Canada Compliance Statement : This class B digital apparatus meets all requirement of the Canadian interference-causing equipment regulations. Cet appareil numérique de la Classe B respecte toutes les exigences de règlement sur le matériel brouilleur du Canada.

**FCC ID : F5309WS4913**  
**IC: 160A-WS4913**

The term "IC" before the radio certification number only signifies that Industry Canada technical specifications were met.

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