



D-305033

A Tyco International Company

### PG9913/PG8913/PG4913

## Wireless Carbon Monoxide (CO) Detector Installation Instructions

### Overview

The Wireless PowerG Two-way Carbon Monoxide (CO) Detector is designed to monitor the CO gas level in residential dwellings and give early warning before potentially dangerous levels exist. CO gas is considered to be a highly dangerous poisonous gas because it is colorless, odorless, tasteless and very toxic. Presence of CO gas inhibits the blood's capacity to transport oxygen throughout the body, which can eventually lead to brain damage. CO gas is produced by incomplete combustion of fuels (such as natural gas, propane, heating oil, kerosene, coal, charcoal, gasoline or wood) that can occur in any device that depends on burning for energy and heat (such as furnaces, boilers, room heaters, hot water heaters, stoves, grills and in any gasoline powered vehicle or engine).

Before harmful CO levels are reached, the detector's internal buzzer beeps periodically and the detector's red LED flashes. In this condition, the buzzer sound can be stopped for 6 minutes by pressing the TEST/MUTE switch. It will not correct the CO gas problem, but will temporarily silence the buzzer while you correct the problem. After 6 minutes, the detector restarts alarm if the CO level remains high. The detector provides low battery and detector end-of-life indications. **Caution: The detector expiry date is stamped on the detector. After the expiry date, the detector should not be used - do not wait for end-of-life indication!**

The detector is continuously self-tested and has a TEST button that enables the user to test the detector anytime.

**NOTE:** The TEST/MUTE switch functions as a TEST switch (in normal operation) or as a MUTE switch (in alarm condition).

The tamper switch actuator, is pressed against the bracket when the unit is attached to the bracket. Removal of the unit from the bracket causes the switch contacts to open, creating a tamper event, which is reported by the transmitter to the alarm system control panel.

### Setting up the Device

**NOTE:** To ensure the continued operation of all wireless devices after performing a system default, a global upload of all wireless programming via DLS is recommended before defaulting the system. After completing the system default, download the wireless programming.

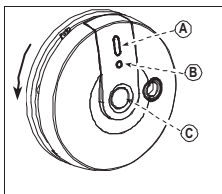
**NOTE:** A placement test cannot be performed from the device. For information on performing a placement test see the HSM2HOST manual.

### Warnings:

- To be installed by service persons in non-hazardous locations only. Failure to properly install, test and maintain a CO detector may cause it to fail, resulting in loss of life.
- Installation of the CO detector should not be used as a substitute for proper installation, use and maintenance of fuel burning appliances, including appropriate ventilation and exhaust systems.
- Unauthorized removal of the unit from the bracket will initiate a tamper alert.

### Legend

- A. Alarm (red) LED
- B. Battery (green) / Fault (yellow) LED
- C. TEST / MUTE button
- D. Red button. If the battery is not inserted the red button stops the detector from being connected to the bracket.
- E. Battery connector
- F. Tab (1 of 4)
- G. Tamper switch actuator
- H. Bedroom
- I. Living room
- J. Kitchen
- K. Basement
- L. Garage

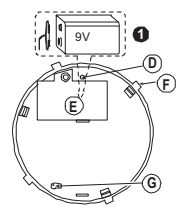


### Inserting Battery

- Separate the detector from the bracket by rotating the detector counter clockwise.
- Open the battery cover and connect the battery to its terminals without the insulator. Verify proper polarity.

**Caution! Dispose of used batteries according to the manufacturer's instructions.**

**NOTE:** When manually programming wireless devices, if a device has been powered up for more than 48 hours it cannot be enrolled into the system until the device has been powered down and powered up. When programming the panel using the Quick Enroll procedure follow the steps detailed in Enroll the Device into the System.



**NOTE:** After restoring a low battery trouble the system may take up to 5 minutes to clear the trouble.

### Enroll the Device into the System

To quick enroll:

- On a keypad press [\*][8][Installer Code][804][0000].
- Powering up the device automatically sends an enrollment request to the system. When the detector successfully enrolls a confirmation message appears on the keypad. To resend an enrollment request power down the device for at least 10 seconds and then restore power.
- Press [\*] key to confirm ID.
- Enter [3] digit zone #.
- Enter [3] digit zone type.
- Enter [1] digit partition # for all desired partitions and press [#]. If using an LCD keypad you can scroll to the desired partitions and press [\*] to toggle the partition.
- On an LCD keypad enter the label by using word library.

To pre-enroll:

- Remotely configure the unique ID number into the system. For more information see the HSM2HOST manual.
- When on-site, power up the device.

**NOTE:** If the wireless device has been powered for more than 48 hours without being enrolled, power down and then power up the device to enroll it.

### Mounting the Device

#### Selecting Installation Location

Selecting a suitable location is critical for the CO detector.

The Consumer Product Safety Commission (CPSC) recommends to use at least one CO detector per household, located as near as possible to sleeping areas of the home, because the human body is most vulnerable to the CO gas effect during sleeping hours. For added protection, install additional CO detectors in every separate bedroom and on every level of your home. If your bedroom hallway is longer than 14 meters (40 feet), install a CO detector at BOTH ends of the hallway. Install an additional detector 6 meters (20 feet) away from the furnace or fuel burning heat source.

For maximum protection, the detector should also be located outside primary sleeping areas or at each level of your home. Mount the detector on a firm wall or ceiling.

**Do not Install CO Detectors:**

- In locations where temperature may be below 0°C (14°F) or above 40°C (104°F).
- In locations where humidity is below 10% or above 93% RH non condensing.
- Near paint thinner fumes.
- Near air conditioners, furnaces, stoves, fireplaces and any other ventilation source that may interfere with the CO gas entering the detector.
- In locations where furniture or draperies may obstruct the air flow.
- In exhaust streams from gas engines, vents, flues or chimneys.
- Where dirt or dust could collect and block the sensor and stop its working.
- In locations that can be reached by children.
- In turbulent air from ceiling fans.
- In close proximity to an automobile exhaust pipe - this will damage the detector.

The detector can be mounted on a wall or ceiling.

It must be mounted with its bracket (when it is attached to its bracket the tamper switch is pressed and the detector automatic reset is performed).

- The battery must be inserted into the detector otherwise you will not be able to close the detector. Locate the bracket on the mounting surface you will not be able to close the detector. Locate the bracket on the mounting surface with 2 supplied screws. When installing the detector on drywall, ensure that the appropriate mountings means are used: (e.g., plastic anchors).
- Mark and drill 2 holes in the mounting surface. Fasten the bracket to the mounting surface with 2 supplied screws. When installing the detector on drywall, ensure that the appropriate mountings means are used: (e.g., plastic anchors).
- Align the detector's tabs with the bracket slots and rotate the detector as shown. Pull the detector outward to verify that it is securely attached.

## Configuration

To enter the wireless configuration section enter [804][Zone Number].

### Device Toggles

[001][04] **Supervision - Default [Y]**

Enables supervision of the device.

### Diagnostic Test

For Diagnostics Test instructions refer to the PowerSeries Neo reference manual. It is the installers responsibility to instruct the user in the following.

**WARNING:** The test switch is the only proper way to test the CO detector. Never use vehicle exhaust! Exhaust may cause permanent damage and void your warranty.

### Maintenance

**Warning:** Press the detector's TEST button once every week to ensure proper operation of the detector. When low battery alarm exists (see specifications) immediately replace the battery.

Once a month, use a vacuum cleaner to keep the air vents free of dust.

### 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) 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, 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/adequate 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 chimneys, 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:

- Mild exposure: slight headache, nausea, vomiting, fatigue (often described as "Flu-like" symptoms).
- Medium exposure: severe throbbing headache, drowsiness, confusion, fast heart rate
- Extreme exposure: unconsciousness, convulsions, cardiorespiratory failure, death.
- Many cases of reported CARBON MONOXIDE POISONING indicate that while victims are aware they are not well, they become so disoriented they are unable to save themselves by either exiting the building or calling for assistance. Young children and household pets are typically the first affected.

### Action to Take When Alarm Sounds

In case harmful levels of CO gas are detected, your detector will go into continuous low level alarm. Try to take the following necessary actions immediately:

1. Push the detector TEST switch to silence the alarm.

**Warning:** Never remove the battery to silence the alarm. Removing the battery removes your protection!

2. Call your emergency service (tel. No. ....), or fire department (tel. No. ....). (Please write the telephone numbers).

3. Immediately move to fresh air - outdoors or by opening door/window. Do a head count to check that all persons are accounted for. Do not reenter the premises nor move away from the open door/window until the emergency services responders have arrived, the premises have been aired out, and your alarm remains in normal condition.

4. After following steps 1 - 3, if your alarm reactivates within a 24 hour period, repeat steps 1 - 3 and call a qualified technician (Tel. No. ....) to investigate for sources of CO gas from fuel burning equipment and appliances, and inspect for proper operation of this equipment. If problems are identified during this inspection, have the equipment serviced immediately. Note any combustion equipment not inspected by the technician and consult the manufacturer instructions, or contact the manufacturers directly, for more information about CO safety and this equipment. Make sure that motor vehicles are not, and have not been, operating in an attached garage or adjacent to the residences.

**Warning: CO gas can be extremely fatal, and can come from several possible sources. This detector only indicates the presence of CO gas near the sensor. CO gas may be present in other areas of the premises.**

### Action to be Taken After the Problem has been Corrected

Once the problem about the CO gas presence in the premises has been corrected, the detector's alarm should be off. After waiting for 10 minutes, push the Test button, to verify that the detector is properly working again.

### Warnings and Limitations

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.

**Caution:** The detector will only indicate the presence of carbon monoxide gas at the sensor. Carbon monoxide gas may be present in other areas.

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

The alarm, including the sensor, is not to be located within 1.5m (5 feet) of any cooking appliance.

The detector may not alarm at low carbon monoxide levels. The Occupational Safety and Health Association (OSHA) has established that continuous exposure levels of 50 ppm should not be exceeded in an 8 hour period. Individuals with medical conditions may consider more sensitive detection devices.

The CO gas detector is not suitable as a smoke detector or fire detector. This detector is not suitable to install in hazardous locations as defined in the National Electrical Code.

Carbon monoxide must reach the detector for proper performance of CO gas detection. The detector may not protect people who are at special risk from carbon monoxide exposure by reason of age, pregnancy or medical condition. If in doubt, consult your medical practitioner.

CO detectors may wear out because they contain electronic parts that fail over time. Test your detector at least every week.

Instruct children never to play with the detector.

Never use detergents or other solvents to clean the detector.

Avoid spraying air fresheners, hair spray, paint or other aerosols near the detector.

Do not paint the detector. Paint will seal the detectors vents and interfere with detecting CO gas.

Detailed information on conditions which can 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 situations.
- Extended operation of unvented 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.

### Troubleshooting

Problem	This means...	You should...
Every 60 seconds, the yellow LED flashes once and 1 beep is heard.	Low battery warning	Replace battery (see SPECIFICATIONS).
When TEST/MUTE button is pressed, the green LED flashes instead of lighting during 2 seconds.	Detector fault or the battery is low	Replace battery (see SPECIFICATIONS). If the problem still exists, replace detector.

Problem	This means...	You should...
Every 60 seconds, there are 3 flashes of the yellow LED and 1 beep is heard.	Detector end of life/ fault.	Replace battery (see SPECIFICATIONS). If the problem still exists, replace detector.
CO detector goes back into alarm 6 minutes after the TEST/MUTE button is pressed.	CO level indicates a potentially dangerous situation.	If you are feeling symptoms of CO poisoning, evacuate your home and call your emergency service.
CO detector alarms frequently even though no high levels of CO are revealed in an investigation.	The CO detector may be improperly located.	Relocate the detector. If frequent alarms continue, have home rechecked for potential CO problems. You may be experiencing an intermittent CO problem.

**Warning!** Changes or modifications to this equipment not expressly approved by DSC could void the user's authority to operate the equipment.

### Specifications

**Caution!** Dispose of used batteries according to the manufacturers instructions and according to local rules and regulations. Observe polarity when replacing batteries.

### CO DETECTION

**Detection Principle:** Electrochemical cell

**End of Life:** 5 years

**Selectable Sensitivity:** DIP switch in EN mode

Not warning at 30 ppm for 120 minutes, 50 ppm for 60 minutes, 100 ppm for 10 minutes.

Warning at 50 ppm between 60-90 minutes, 100 ppm for 10-40 minutes, 150 ppm within 3 minutes.

**DIP switch in UL mode**

Not warning at 30 ppm for 30 days, 70 ppm for 60 minutes, 150 ppm for 10 minutes, 400 ppm for 4 minutes.

Warning at 70 ppm between 60-240 minutes, 150 ppm for 10-50 minutes, 400 ppm between 4-15 minutes.

**Audible Alarm Volume:** >85db at a distance of 3m (10 ft).

### WIRELESS

**Frequency Band (MHz)** Europe and rest of world: CE Listed PG4913: 433MHz; PG8913: 868MHz; FCC/IC/UL listed PG9913: 912-919MHz

**Communication Protocol:** PowerG

Supervision: Automatic signaling at 60-minute intervals (912-919 MHz version), 15-minute intervals (433-434, 868-869 versions), 200 seconds or according to the local standards.

**Transmitted Messages:** CO gas alarm, low battery, tamper, trouble message as a result of sensor end of life or sensor trouble, supervision.

**Tamper Alerts:** Tamper message is transmitted to the alarm controller when the detector is removed from its bracket.

### ELECTRICAL DATA

**Power Source:** 9 Volt alkaline battery, Energizer #522.

**Current Drain:** 55 µA average current consumption. For UL 42 µA standby, 22.2mA in alarm.

**Battery Supervision:** Automatic transmission of battery status data part of any transmitted message.

**Battery Life Expectancy:** At least 1 year (for typical use)

**Low Battery Threshold:** 7.8 V

### Audible and Visual Indications

Condition	Visual Indications (LEDs)			Audio Indication
	Red	Yellow	Green	
Alarm	4 flashes (*)	-	Green	4 beeps (*)
End of Life	-	3 flashes every 60 sec.	-	1 beep every 60 sec.
Fault	-	1 flash	-	1 beep every 60 sec.
Battery OK	-	-	-	Flashes once every minute
Low battery	-	1 flash every 60 sec.	-	1 beep every 60 sec.
MUTE button is pressed (to silence the alarm for 6 minutes)	4 flashes (*)	-	-	1 for 6 minutes (**)
TEST button is pressed	1 flash (the 1st LED)	1 flash (the 2nd LED)	Flashes (the 3rd LED) If CO circuit test and battery are OK - lights during 2 sec.	1 beep









