INSTALLATION AND MAINTENANCE INSTRUCTIONS

W4-IC Combination Smoke/ Carbon Monoxide (CO) Detector with Built-in Wireless Transmitter

Honeywell

3825 Ohio Avenue, St. Charles, Illinois 60174
1-800 SENSOR2, FAX: 630-377-6583
www.systemsensor.com

SPECIFICATIONS

Electrical Specifications

Voltage:	3 volts DC
Battery Type:	CR-123 lithium
Battery Manufacturer:	Duracell DL123A or Panasonic CR123A
	Use of a different battery may have a detrimental effect on device operation
Number of Batteries:	4
Sensitivity	0.9 to 2.64/ft. (.27 to .80/m)
Audible Signal:	85dBA

Physical Specifications

Diameter:	5.95 inches (15.113 cm)
Height:	2.03 inches (5.1562cm)
Weight:	13.92oz (383 g)
Operating Temperature Range:	0 - 38° C (32 - 100°F)
Storage Temperature Range:	-10 - 70° C (14 - 158° F)
Operating Humidity Range:	20-95% RH

This product is compatible with iControl Technicolor TCA203 control panels
*NFPA requires a UL listed sounder on the NAC circuit.
Notice: This manual shall be left with the owner/user of this equipment.

ZigBee®
Certified product
Global 2.4 Ghz wireless use
ZigBee® Certified is a registered trademark of the Zigbee Alliance.

BEFORE INSTALLATION

Please read this manual thoroughly along with the Application Guides for System Sensor Smoke (A05-1003) and CO Detectors (A05-1099), which provide detailed information on detector spacing, placement, zoning and special applications. Copies of these manuals are available at systemsensor.com.

IMPORTANT: This detector must be tested and maintained regularly following NFPA 72/NFPA 720 requirements.

GENERAL DESCRIPTION

The W4 series is a battery-operated, system-connected, combination carbon monoxide/smoke detector with a built-in wireless transmitter for use with iControl wireless control panel models. It will report maintenance, tamper and independent smoke alarm or CO alarm signals to a compatible wireless control panel. It has a speaker for vocal feedback, multi-criteria smoke detection, and integrated side LED windows that are viewable from 360 degrees when the detector is in an alarm condition.

FEATURES

Smoke Features
- Multi-criteria smoke sensing using a combination of photoelectric, heat, flame flicker and carbon monoxide sensing.
- Drift compensation and noise rejection algorithms.
- Smoke test button.
- 360 degree, side viewable red LED smoke indication.

CO Features
- 10 year electrochemical CO sensor.
- Sensor end-of-life notification.
- CO test button.
- RealTest® functional gas entry test capable.
- 360 degree, side viewable blue LED CO indication.

Audible Annunciation
- Local integral sounder.
- Voice speaker provides supplemental instructions during alarm, installation and maintenance feedback.

Installation and Maintenance
- Universal mounting base.
- Audible maintenance information including smoke sensitivity.

Other Features
- Ships with 4 CR-123 lithium batteries.
- UL/ULC listed to standards 268 and 2075.

VISIBLE ANNUNCIATON

The W4 series detector has a multi-color top LED; Green, Red, and Amber. The LED is green for supervisory indication; it blinks during power on, reset, and during normal operation. The LED is amber to signal maintenance and trouble events. W4 utilizes the side LED windows to indicate alarm events; red for smoke and blue for CO.

INSTALLATION GUIDELINES

Ceiling: Detector should be at least 12 inches (30 cm) from any wall.

Wall: Detector should be no closer than 6 inches (15 cm) from ceiling.

- Do not install outdoors or in any environment that does not comply with the detector's environmental specifications.
- Install in accordance with NFPA 72 and 720 standards. NFPA 72 and 720 define standards for both commercial and residential installation of smoke and CO detectors. Local laws involving CO detection should also be considered.
- If the installation can be interpreted as residential, consult the section of NFPA 720 that outlines residential applications. Chapter 9.4.1.1, for example, states that carbon monoxide alarms or detectors shall be installed as follows:
  - Outside each separate dwelling unit sleeping area in the immediate vicinity of the bedroom.
  - On every level of a dwelling unit, including basements.
  - Consult NFPA 72, the local Authority Having Jurisdiction (AHJ), and/or applicable codes for specific information regarding the spacing and placement of smoke detectors.

FIGURE 1: ALARM LOCATION DIAGRAM FOR RESIDENTIAL APPLICATION

■ – CARBON MONOXIDE/SMOKE ALARM LOCATION FOR MULTI-LEVEL RESIDENCE
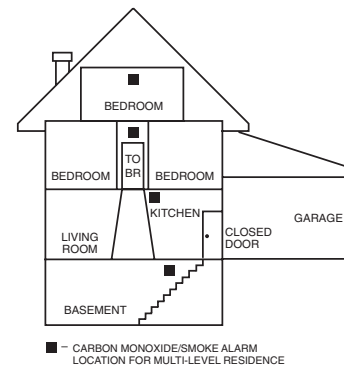
S0295-01

- Do not install detectors in the following areas:
  - In or near areas where particles of combustion are normally present such as kitchens, in garages, near furnaces, hot water heaters, or gas space heaters.
  - In very cold or very hot areas that may be outside the detectors operating range.
  - In wet or excessively humid areas, or next to bathrooms with showers.
  - In dusty, dirty, or insect-infested areas.
  - Near fresh air inlets or returns or excessively drafty areas. Air conditioners, heaters, fans, and fresh air intakes and returns can drive smoke away from the detector.

INSTALLATION

Add the CO/Smoke Detector to the TouchScreen:

1. Remove detector from packaging and separate the mounting base from the detector head.
2. On the TouchScreen, log into the Settings app with an Installer code.
3. Enter Technician Code/ID.
4. In the Settings menu, tap Sensors & Zones > Add a Sensor/Zone.
5. Remove the battery tab from the detector, making sure the batteries remain fully seated. The detector will run through its initialization. (See Table 1.)
6. The base model will enter Search mode (skip to step 8). The voice model will prompt for language selection. (Move to step 7.)
7. Press the Smoke test button to select English or the CO test button to select Spanish language settings. Once the language is selected the detector will enter Search mode. (To reset language selection, see Restore Factory Settings section.)
8. At the Locating Wireless Sensors screen, tap Next. A Done button appears on the screen and the TouchScreen searches for sensors that are available to be added. As sensors are found, a grayed icon appears for that sensor. It will indicate a Trip to Pair operation request. The tamper feature is disabled at this time to allow time to install the detector and mounting bracket on the ceiling or wall.
9. A sensor that has been automatically enrolled will appear on the screen with a green check mark. If after waiting 15 seconds a green check mark does not appear, press the respective test button to pair the sensor to the TouchScreen. Press a test button to vocalize the signal strength status between sensor and panel.
10. Any located sensors that were not paired are released by the TouchScreen and can be added later. The Wireless Sensors Located screen shows the number of wireless sensors found and paired.
11. Upon success pairing of both CO and Smoke sensors, tap Done, tap Next. The Configure Wireless Sensors screen shows icons of the sensors that were found and paired. Touch each sensor icon to configure the corresponding device.
12. The Add Sensor/Zone Modify screen appears. To change the Smoke Icon or CO Icon (if multiple options are available) and the 24-Hour zone function, tap the drop down arrow next to the value you wish to modify, and then select the new value from the choices provided.
13. The Add Sensor/Zone Modify screen appears. To modify a Zone Label on the TouchScreen, tap the field, use the onscreen keyboard to enter your changes, and tap Done to save your changes.
14. Tap Next in the Add Sensor/Zone screen. If all of the sensors have not been configured, the Modify screen appears for each sensor to let you review its details. Change the details as needed or tap Next to cycle through all sensors. The sensors are marked as configured.

MOUNTING

Physically mount the smoke detector in the desired location;

NOTE: NFPA 72 recommends the installation of detectors only after completing construction or any other dust producing activity.

Smoke detectors are not to be used with detector guards unless the combination has been evaluated and found suitable for that purpose.

1. Disconnect alarm-notification appliances, service-release devices, and extinguishing systems.
2. Hold the smoke detector where you plan to install it. If the green LED is blinking rapidly while off its mounting base, this indicates the RF signal strength is adequate. Press a test button and verify the signal strength.
3. Using two supplied screws and anchors, mount the base.
4. Attach the smoke detector to the mounting base with a clockwise motion.
5. Test each detector as described in the Testing section.
6. Notify the proper authority that the system is in operation.

TESTING

Test communications between the detector and the control panel;

The detector has two test buttons; one for smoke testing and one for CO testing. The detector may also be functionally tested using canned smoke and canned CO. If the detector fails any of the test methods the detector should be replaced.

NOTE: Testing the detector will activate the alarm and send a signal to the panel. Before testing, notify the proper authorities to avoid any nuisance alarms.

1. Pressing the Smoke test button for 1 second will provide audible diagnostic information for the homeowner on sensor status and battery life. Pressing and holding the Smoke test button for 3 to 5 seconds will provide diagnostic information for the technician including smoke sensitivity readout and then enter smoke entry test mode. (See Smoke Entry Test section.)
2. Pressing the CO test button for 1 second will provide diagnostic information for the homeowner on sensor status, battery life, and CO sensor life. Pressing and holding the CO test button for 3 to 5 seconds will enter functional gas entry test mode. (See Functional Gas Test section.)
3. The control panel alarm and all auxiliary functions should be verified for a complete test of the system.

TABLE 1: OPERATION MODES

MODE	STATUS LED (TOP)	LED WINDOWS (SIDE)	SOUNDER	SPEAKER
POR out-of-box	Blink red-green-amber	Dark	Silent	Voice welcome, instructions follow POR for language selection
POR	Blink green, 2 seconds when boot is complete.	Dark	Silent	Silent
Enrollment	Blinks green every 5 seconds	Dark	Silent	Annunciates Enrollment Successful along with signal strength, or enrollment failed after 2 minutes.
Tamper Mode (Enrolled with panel, not mounted on base)	Blink amber every 10 seconds	Dark	Silent	Voice signal strength annunciation with a press of the test button.
Standby (Mounted on Base)	Blink green every 10 seconds	Dark	Silent	Silent
Smoke Alarm	Blink red	Blink red	Temp-3	Voice smoke warning
CO Alarm	Blink red every 10 seconds	Blink blue	Temp-4	Voice CO warning
Powered Down	Dark	Dark	Silent	Silent

FIGURE 2: TEST BUTTON LOCATION AND OPERATION

S0338-00

FIGURE 3: CO GAS ENTRY LOCATION
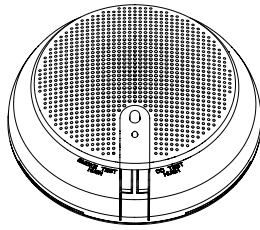
S0339-00

SMOKE ENTRY TEST / SMOKE SENSITIVITY READOUT

To smoke test W4, because it is a multi-criteria detector), it must be put into the smoke test mode as follows:

1. With the detector in standby mode, press and hold the smoke test button for 3 to 5 seconds. The W4 will provide diagnostic information including sensor status and smoke sensitivity reading and will prompt for smoke entry and annunciate per Table 2.

2. While W4 is in smoke entry mode with its green LED flashing, spray canned smoke into the detector. The canned smoke that can be used is approved for test include: Home Safeguard Industries 25S, SDi CHEK02 and CHEK06, SDi SOLOA4, and SDi SMOKESABRE".

3. When the detector senses the presence of the smoke, the detector will sound and illuminate per Table 2 and a smoke alarm signal will be sent to the control panel with a test indication.

4. Verify the smoke alarm signal was received by the control panel.

FUNCTIONAL GAS TEST

Solo C6 brand canned CO may be used to verify the detector's ability to sense CO by utilizing the RealTest® feature as follows:

1. Press and hold the CO test button for 3 to 5 seconds. The green LED will start blinking rapidly indicating tshe detector is in RealTest® mode. (If the detector will not go into RealTest® mode, the CO sensor may be in fault or at end-of-life.)

2. While the green LED is blinking rapidly, spray a small amount of canned CO directly into the CO gas entry port. (See Figure 3.)

3. The detector will go into CO alarm and send an alarm to the channel panel if the gas entry was successful and the CO sensor is detected it-functioning properly.

4. Verify the smoke CO alarm signal was received by the control panel.

5. The CO test will automatically clear when the CO clears from the sensor or in 30 seconds if no CO was introduced.
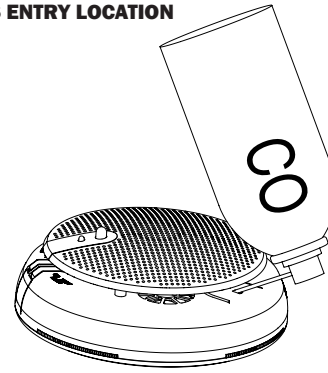
MAINTENANCE

The W4 detector reports maintenance issues to the control panel and communicates them visually and audibly per Table 2.

Trouble feature: When the sensor (supervision) is in a trouble condition (such as a detector that is dirty or CO sensor non-functioning), the detector will send a trouble signal to the panel. Depending on the issue, the detector must then be serviced or replaced.

CO sensor end-of-life timer feature: When the CO sensor has passed end-of-life, a trouble signal will be sent to the panel. This indicates that the CO sensor inside the detector must be replaced. If unresolved for 30 days, the detector will chirp intermittently. The typical life of the CO sensor is ten years from the date of manufacture; it is recommended to periodically check the "Replace by" sticker located on the back of the detector head.

Batteries: WARNING: Use only Duracell DL123A or Panasonic CR123A lithium Batteries may present risk of fire or explosion. Remove all old batteries, wait 10 seconds then insert four new batteries.

NOTE: Before performing any maintenance on the detector, notify the proper authorities that maintenance is being performed and the system will be temporarily out of service. Disable the zone or system undergoing maintenance to prevent any unwanted alarms. Power must be removed from the detector before performing maintenance of any kind.

CLEANING

1. Remove the detector head by turning counterclockwise.

2. Clean the outside casing with a cloth. Ensure that the holes on the front of the alarm are not blocked with dirt and dust. Canned air can be used to remove any dust or debris.

3. Reattach the detector head to the mounting base by rotating clockwise.

TABLE 2: LED INDICATION & SOUNDER DURING TEST AND MAINTENANCE

MODE	STATUS LED (TOP)	LED WINDOWS (SIDE)	SOUNDER	SPEAKER
Smoke Alarm System Test – Waiting for smoke entry (Press and hold Smoke test button 3-5 seconds)	Blink green once a second	Dark	Silent	Voice instructions for testing including warning of alarm signal
Smoke Alarm System Test (Upon successful smoke entry)	Blink red every 10 seconds	Blink red	Temp-3	Voice smoke warning
RealTest® Functional CO gas entry test - Waiting for gas entry (Press and hold CO test button 3-5 seconds)	Blink green once a second	Dark	Silent	Voice instructions for testing including warning of alarm signal
RealTest® Functional CO gas entry test -Upon successful gas entry	Blink red every 10 seconds	Blink blue	Modified Temp-4	Voice carbon monoxide warning
Low Battery	Blink Amber every 45 sec	Dark	Chirp Every 45 seconds after 7 days	Voice instructions by pressing either test button
Smoke Maintenance	Blink Amber every 5 seconds	Dark	Silent	Voice smoke maintenance instructions if Smoke test button is pressed
CO Trouble	Blink Amber every 5 seconds	Dark	Silent	Voice CO maintenance instructions if CO test button is pressed
CO End of Life - First 29 days	Blink Amber every 3 seconds	Dark	Silent	Voice end of life instructions if CO test button is pressed
CO End of Life - 30 days after panel notification	Blink Amber every 3 seconds	Dark	Chirp Every 45 Seconds	Voice end of life instructions if CO test button is pressed

4. Test the detector to insure it is fully functional. (See Testing section.)

5. Notify the proper authorities when the system is back in service.

Do not paint, and do not use cleaning agents, bleach or polish the detector.

RESTORE FACTORY SETTINGS

The W4 detector can be restored to its factory settings by pressing and holding both the smoke and CO test switch buttons simultaneously for 10 seconds which will cause the status LED to fast blink green. A release and repress of both test switch buttons will reset the detector to its factory settings.

LIMITED LIFE OF CO ~~SENSOR~~

This detector is manufactured with a long-life electrochemical carbon monoxide sensor. Over time the sensor will lose sensitivity and will need to be replaced. The life span of the CO sensor is approximately ten years from the date of manufacture.

~~Periodically check the detector's replacement date. Remove the detector head and refer to the 'replace by' sticker placed on the underneath side of the detector. The sticker will indicate the date the detector should be replaced.~~

Reminder: This detector is also equipped with a feature that will signal the panel once the CO sensor has passed the end of its' useful life. If this occurs, it is time to replace the detector.

What to do if the detector goes into CO alarm: If the detector goes into CO alarm (4 beeps), immediately move to a spot where fresh air is available, preferably outdoors, where the air is safe and call your security service provider. Tell your provider the detector alarm status, and that you require professional assistance in ridding your home of the carbon monoxide.

This detector is NOT:

- A substitute for the proper servicing of fuel-burning appliances or the sweeping of chimneys.
- To be used on an intermittent basis or as a portable alarm for the spillage of combustion products from fuel-burning appliances or chimneys.

Carbon monoxide gas is a highly poisonous gas which is released when fuels are burnt. It is invisible, has no smell and is therefore is impossible to detect with the human senses. Under normal conditions in a room where fuel burning appliances are well maintained and correctly ventilated, the amount of carbon monoxide released into the room by appliances should not be dangerous.

CO WARNING

<div align="center">⚠ WARNING</div>

WARNING: Carbon Monoxide is an odorless, colorless, tasteless gas when unit is in alarm move to fresh air immediately.

SYMPTOMS OF CARBON MONOXIDE POISONING

Carbon monoxide bonds to the hemoglobin in the blood and reduces the amount of oxygen being circulated in the body. The following symptoms are examples taken from NFPA 720; they represent approximate values for healthy adults.

TABLE 3. CO EXPOSURE SYMPTOMS

CONCENTRATION (PPM CO)	SYMPTOMS
200	Mild Headache after 2-3 hours of exposure
400	Headache and nausea after 1-2 hours of exposure
800	Headache, nausea, and dizziness after 45 minutes of exposure; collapse and unconsciousness after 2 hours of exposure

Many cases of reported carbon monoxide poisoning indicate that while victims are aware that they do not feel well, they become so disoriented that they are unable to save themselves by either exiting the building or calling for assistance. Also young children, elderly and pets may be the first to be affected.

CO ALARM ACTIVATION

Per UL standard 2075, the W4 series detector has been tested to the sensitivity limits defined in UL standard 2034.

TABLE 4: CO ALARM THRESHOLDS

Parts per Million (ppm)	Detector Response Time (Min.)
30 + -3ppm	No alarm within 30 days
70 + -5ppm	60-240
150 + -5ppm	10-50
400 + -10ppm	4-15

Please refer to insert for the Limitations of Fire Alarm Systems