

# MasterGuard Radon Gas Detector RD600

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## **Facts and Concerns Regarding Radon Gas**

Radon is a radioactive gas that is colorless, odorless, and tasteless and is impossible to detect without the use of sensitive test equipment. Radon is a naturally occurring gas produced by the breakdown of uranium in soil, rock, and water. When allowed to accumulate to high levels, it can be hazardous to long-term health. The Surgeon General has warned that radon is the second leading cause of lung cancer in the United States. Only cigarette smoking causes more lung cancer deaths.

The EPA presently suggests that corrective action be taken to reduce the radon levels in your home if measured over the long term at 4 pCi/L or greater. For more information regarding radon gas, please visit the EPA web site at [www.epa.gov/iaq/radon/index.html](http://www.epa.gov/iaq/radon/index.html).

## **Location of the Detector**

The detector should be placed in the lowest living area of the home in a location where it will not be disturbed. The audible alarm should be able to be heard from areas frequented on a daily basis. A second detector placed in a basement room rarely used, is also a good means to determine the level of radon in the home.

Location of the detector should be at least 3 feet from windows, doors, or any other potential openings in the exterior walls. The location of the detector should be at least 1 foot from the exterior wall and at least 20 inches from the floor. No other object should be placed within 4 inches of the detector.

## Areas to Avoid

- Near drafts caused by heating, ventilating, and air conditioning vents, doors, fans and windows.
- Near excessive heat, such as fireplaces and direct sunlight, and areas of high humidity.
- Near televisions, computers, radios, or other electrical equipment.
- Near curtains, furniture, or other items that may inhibit the flow of air through the ventilation slots.
- In general, the detector should not be located in kitchens, laundry rooms, closets, or bathrooms.
- Do not place on metal, granite, or slate

## Installation

The RD600 Radon Detector is designed to plug into a standard 120-volt household outlet using the attached power cord. The detector may be placed face-up on a tabletop, counter top, or any flat surface where the ventilation slots will not be blocked. The detector must be kept dust free. A proper airflow must be maintained through the detector to obtain an air sampling representative of the local environment.

**WARNING: Do not plug the detector into a wall outlet controlled by a light switch.**

**WARNING: Risk of severe electrical shock. There are no user serviceable parts inside the detector. Do not remove the back cover. Removal of the back cover will void your warranty.**

## Display Features

The numeric LED display shows the level of radon gas in Pico Curies per liter (pCi/L). The display range is 0.0 to 999.9. The RD600 Radon Detector display is designed to notify the user of the level of radon gas on either a short-term or long-term basis, and is updated every hour if there is a change in the level of radon gas. Both long-term and short-term measurements are running simultaneously and are accessed by use of the menu button (see **Menu Button Operation** section).

## **Short-Term Display**

The display for the short-term reading is an average of the levels of radon gas over the past seven days. The short-term reading allows the user to monitor short-term fluctuations in the home and provide a better feel for problems relating to seasonal and weather related variations in the radon levels. A green LED next to the letter “S” indicates this reading. When the short-term measurement reaches 4 pCi/L or greater, for 30 consecutive days or more, the audible alarm will sound (see Audible Alarm).

## **Long-Term Display**

The display for the long-term reading is an average of the levels of radon gas for the length of time that the detector has been powered up or last reset. This reading relates to the average radon level that you would be exposed to if you were in the continual presence of the RD600 Radon Detector. A green LED next to the letter “L” indicates this reading. When the reading on the long-term reaches a level of 4 or greater an audible alarm will sound immediately.

## **Start-Up**

Upon initial power-up, the display will momentarily show an internal code including letters and numbers. The detector will conduct a self-test and the audible alarm will sound four chirps. The display will then read “--”. The two dashes will remain until sufficient samples have been taken to create an accurate reading. For the short-term and long-term readings, samples need to be taken for 2 days (48 hours) before an accurate reading can be displayed.

## Audible Alarm

4 pCi/L is the level set by the EPA as the threshold at which action should begin to correct the radon problem within the home. The detector will alarm in both long-term and short-term modes. The detector will alarm when:

- Short-term displays 4 pCi/L or greater for 30 consecutive days, or
- Long-term displays 4 pCi/L or greater (alarms immediately, no 30 day delay)

When the detector goes into an alarm state, the buzzer will sound 4 short chirps. This sound will be repeated every hour until the level on the long-term reading drops below 4 or until the user mutes the alarm. Instructions for this function can be found under Menu Button Operation.

**Please note: When in alarm the detector will lock in the mode under which the alarm condition was identified**

## Menu Button Operation

The menu button controls 4 different functions for the radon detector. These functions are controlled by the length of time that the button is pushed in.

1. **Long-Term / Short-Term**  
This function is used to change the display between the short-term and long-term readings. Press the menu button in for one second. The display will change the instant the menu button is released with the LED indicator light lit next to the “S” or “L” to indicate which reading is now being viewed. If the menu button is held in for longer than 3 seconds, the display will not change.
2. **Test**  
This function is used to test the audible alarm. Press and hold the menu button in for 5 seconds. The alarm will sound 4 chirps as if it is in an alarm condition. Release the menu button once the alarm begins to sound.

### 3. **Alarm Mute On/Off**

This function allows the user to silence the audible alarm. **While in an alarm condition**, press and hold the menu button for 15 seconds. As you pass through the test phase as indicated above, the alarm will sound 4 chirps. The display will read "Aoff". Release the menu button as soon as "Aoff" is displayed. When the menu button is released, the display will return to normal condition. **If the long-term reading returns to a safe level, the audible alarm will be reset to the on position.** If desired the alarm can be reactivated by repeating the same process. When reactivating the alarm, the display will read "Aon".

**Please note: This function is only active when the detector is in an alarm condition reading of 4 pCi/L or greater, in either long or short-term mode.**

### 4. **Reset/Clear Memory**

This function allows the user to clear and reset the memory for the short and long-term readings. This should be done anytime the detector is moved to a different location. Press and hold the menu button for 20 seconds. The display will read "CL". When the menu button is released, the "CL" will flicker until the memory has been completely cleared. Once the memory has been cleared, the display will read "--" for 48 hours until enough samples have been taken to provide an accurate reading.

**Please note:** While using this function, the detector will pass through the test and alarm functions as described above.

**A brief description of the Menu Button Functions can be found on the back of the detector.**

**Note: To prolong the life of the sensor and to ensure proper readings, vacuum the ventilation slots on the detector, using the upholstery attachment on your vacuum every 3 months.**

## **Note for Radon Measurement Professionals:**

### **Calibration**

The U.S. Environmental Protection Agency, Radiation and Indoor Environments National Laboratory (R&IE) has approved this device for radon measurement. If you are a licensed radon measurement professional using this device for home inspections, etc., the EPA recommends a calibration and background check be performed annually. To request calibration, please contact MasterGuard at 1-877-453-3473 to receive calibration authorization and processing instructions. The fee for calibration is \$85.00 and the calibration process takes approximately two weeks.

## **Note for Home Owners**

Calibration is optional for the private use of this device. Homeowners requesting a calibration must follow the procedures outlined above.

### **Error Messages**

Every 24 hours, the detector will do a self-test. If there is a failure in this self-test an error message will appear in the display window.

**Err3 Noise Error**

This error is normally from electrical noise interference. This error can be caused by computers, televisions, fluorescent lights or other electrical items. The detector needs to be moved to a different location away from the item causing the interference.

**Err4 Sensor Error**

This error occurs if the sensor fails the self-test. If this error code appears, the detector should be unplugged for five minutes and powered back up. If the Err4 reappears, please call our customer service department at 1-877-453-3473 for instructions on how to have your detector replaced.

**WARNING: Risk of Electrical Shock! Do not remove the back cover. Sensor requires 250VDC and may cause severe electrical shock. Removal of the back cover will void your warranty.**

**Please Note:**

To offer protection to your furniture, we have included 4 non-slip rubber pads to be applied to the back of the detector at each corner.

## Specifications

Power Source	
Adapter	120Vac, 60Hz, 6.5 W Model No. DCU180020
Input for Gas	
Detector	18VDC, 200mA
Sensor Voltage	250VDC
Sensor	Ionization Chamber
Full Scale Reading	0.0 to 999.9 pCi/L
Operating Environment	0°C (32°F) to 40°C (104°F)
Storage Environment	-20°C (-4°F) to 85°C (185°F)
Audible Alarm	85dB at 10cm Beeps every hour if long-term readings are 4 pCi/L or greater, or short-term reads 4 pCi/L or greater for 30 consecutive days. May be muted by the user.
Averaging Frequency	Levels will be updated on the display every hour.
Short-Term	Average over the past 7 days.
Long-Term	Average from the time of last reset. Maximum sampling time of 5 years. The detector will automatically reset after 5 years of accumulated data.
Accuracy	+/- 20% or 1 pCi/L whichever is greater
Dimensions	4.7" x 3.1" x 2.1"

## **Five Year Warranty**

MasterGuard, LP warrants this product to the original retail purchaser, to be free from defects in material and workmanship except as otherwise provided herein. This warranty is not transferable and is effective from the date of original retail purchase.

Units returned to MasterGuard, LP that are determined to be within the warranty period and found to be defective, will be repaired or replaced free of charge to the original purchaser. If you suspect that your detector is defective, please follow the instructions found under **Procedures for Warranty Service**.

### **Procedures for Warranty Service:**

- Package the detector carefully, including the power cord, with bubble wrap, newspaper, or other packing material to minimize the risk of damage during shipping. Inside the package, please enclose:
  - Your first and last name, mailing address, home phone number, including area code
  - Description of the product issue for which you are submitting a warranty claim.
  - Copy of the original purchase receipt showing date of purchase (mandatory).
  
- Send the package, postage prepaid, to:

**MasterGuard, LP**  
801 Hammond St. Suite 200  
Coppell, TX 75019  
Attn. Product Warranty Dept.

- Note: ▫ Shipping insurance and shipping via carrier with tracking capabilities is optional, however recommended.
- Please allow 2-4 weeks to process your warranty claim.

## **This Warranty Does Not Cover:**

1. Cost of shipping the product.
2. Normal wear, scratches or fading of product.
3. Damage caused by abuse, misuse, tampering with the product including the removal of the back cover.
4. Damage caused by failure to follow installation and use directions found in this manual.
5. Consequential damages, incidental damages or expenses, including damages to property and personal injury.

This warranty is limited to the provisions clearly stated herein. Any implied warranties, warranties of merchantability, warranties of fitness for a particular use are excluded.

If any of this warranty is prohibited by federal, state or local law, that cannot be preempted, that provision shall not be applicable. This warranty gives you specific legal rights and you may also have other rights that vary from state to state.

## **MasterGuard**

801 Hammond St. Suite 200

Coppell, TX 75019

1-877-453-3473

[www.masterguard.com](http://www.masterguard.com)