

**ramon**  
RADON MONITOR 2.2



## I.) GENERAL ...

- Your RAMON 2.2 Radon Monitor comes with a power supply unit and the instruction manual.
- Before using your Radon Monitor, please carefully read this instruction manual.
- Keep the instruction manual in a safe place for later reference. Also, keep the invoice as it will be necessary to make claim under the warranty.
- The Radon Monitor is powered by a power supply unit which works on any input voltage from 100 V to 240 V and 50 - 60 Hz.
- The unit must be kept dust free. Proper airflow must be maintained through the Radon Monitor to obtain an air sampling representative of the local environment.

## II.) INSTALLATION ...

- Some electronic equipment, like Radios, TV sets, PC monitors and cellular phones generate magnetic fields that can interfere with the Radon measurement (see section VIII). The RAMON 2.2 Radon Monitor should be placed at least one meter from such devices!
- The ambient temperature at the location of the Radon Monitor should be within +5°C und +35°C. Do not place the instrument near heat sources, and avoid exposure to direct sunlight.
- In general, the unit should not be installed in areas of high humidity like bathrooms, kitchens and laundry rooms.
- To obtain precise Radon measurements the Radon Monitor should be placed at least one meter from windows and 0.5 meters from the floor.
- Do not position the instrument near curtains, furniture, or other items that may inhibit the flow of air through the ventilation slots.
- The Radon Monitor may be placed on any flat surface (a tabletop, counter top ...) or mounted to a wall.

## III.) WHERE SHOULD YOU TEST FOR RADON ...

We recommend first checking the rooms of your children for high Radon levels since this radioactive gas is a serious health risk, in particular to children. Then you should test any rooms in your home where you spend a lot of your time (bedroom, living room...). As Radon seeps into your home from the ground, highest Radon levels can be expected on the lowest floor. Therefore, taking Radon measurements in this area is highly recommended. To begin taking measurements, please read section VI.) of your instruction manual.

## IV.) OPERATING MODES ...

The RAMON 2.2 Radon Monitor is designed to notify the user of the average level of Radon gas on either a long-term or short-term basis:

**"long-term"**: The displayed value for the long-term reading indicates the average Radon level for the length of time since the memory was last reset. A green LED light below to the letter "L" indicates this mode of operation.

The long-term mode allows Radon measurements with long sampling times (up to five years). This is useful if for example you want to determine the average Radon level over a one-year period. (Recommendations from health authorities concerning Radon always refer to the one-year average Radon levels.)

**Note:** After 5 years of continuous operation - if the Radon Monitor is not reset in the meantime - the device will automatically clear the accumulated data and start measuring anew. Therefore we suggest taking periodic readings and keeping a written record of them.

**"short-term"**: The displayed value for the short-term reading indicates the average Radon level over the past seven days. A green LED next to the letter "S" indicates this mode of operation.

The short-term reading allows the user to monitor short term fluctuations in the Radon levels. This is useful to determine seasonal and weather related variations in the Radon levels or to find out if Radon mitigation actions are effective.

## V.) OPERATION OF THE INSTRUMENT ...

1. Plug the power supply into a standard household outlet.
2. Connect your RAMON 2.2 Radon Monitor with the power supply unit. As the Radon monitor does not have an ON/OFF button, the Radon measurement starts automatically at this point.
3. The display will read "--" and the green LED light next to the "S" or "L" indicates the active mode (longterm or short-term).
4. Now, samples need to be taken by the Radon monitor for 2 days (48 hours) before a first reading will be displayed.
5. After these initial 48 hours Radon levels are permanently displayed and the user can toggle between the long-term or short-term readings by pressing the MENU button for one second. During the first week the long-term and short-term values are identical.
6. The display is updated every hour if there is a change in the level of Radon gas.
7. When the instrument is disconnected from the power supply, all accumulated data will remain stored in memory. The interrupted measurement will continue automatically as soon as the instrument is reconnected to the power supply.

**Note:** Average radon levels higher than 9999 Bq/m<sup>3</sup> cannot be displayed by the device. In such a case the displayed value will remain at "9999". If your Radon

Monitor is detecting levels at this height, you should contact the nearest Radiation Protection Office immediately.

## VI.) STARTING A NEW MEASUREMENT - RESETTING THE MEMORY...

At the beginning of a new measurement period and/or location, prior accumulated data needs to be cleared from the device's memory. We suggest taking periodic long- and short-term readings and keeping a written record of them as well as the corresponding location of the device.

### Reset / Clear:

Press and hold the MENU button for 20 seconds! Messages like "aOFF" etc. that are displayed during this time can be ignored. After 20 seconds the display will read "CL" and you may release the button. 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 the first accurate reading. (See also section V.)

## VII.) RECOMMENDATIONS ON INDOOR RADON CONCENTRATIONS...

According to the "European Commission Recommendation EURATOM 90/143" Radon concentrations in homes should not exceed:

- 200 Bq/m<sup>3</sup>  
in houses which were constructed after 1990
- 400 Bq/m<sup>3</sup>  
in houses which were constructed before 1990

Please note, that these recommendations refer to the one-year average Radon concentration.

If Radon concentrations in your home exceed these recommended levels, we advise you to thoroughly ventilate the affected rooms. If more than 1000 Bq/m<sup>3</sup> are detected or if frequent ventilation doesn't help in reducing Radon to safe levels, please contact your nearest Radiation Protection Office for further advice!

## VIII.) 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 caused by electrical noise interference from other electronic equipment (mobile phones, etc.) To clear the error, disconnect the Radon Monitor from the power supply and re-connect it again. Move the Radon Monitor to a different place away from the device causing the interference.

**"Err4" Sensor Error:** This error occurs if the sensor fails the self-test. If this error code appears, the detector needs to be replaced. Please call GPBM Nordic AB: +46-31-7991600 for further assistance.

## IX.) CLEANING THE RADON MONITOR...

Only clean the outside of the RAMON 2.2 Radon Monitor and never open the instrument! Before cleaning, please disconnect the unit from the power supply. The ventilation slots on the detector can be freed from dust by using a vacuum cleaner. To clean the housing only use a dry cloth. Never clean the Radon monitor with any liquids like water, acids, alcohol, abrasives etc.!

## X.) REPAIR...

**WARNING:** There are no user serviceable parts inside the unit and never try to repair it by yourself. Do not remove the back cover! Risk of severe electrical shock! Removal of the back cover will void your warranty.

In the case that one of the following defects or mishaps occurs, immediately disconnect the device from the power supply and call GPBM Nordic AB: +46-31-7991600.

- The wall transformer, or its power cord are damaged
- The housing is cracked or otherwise damaged
- Any liquids or solids get into the Radon Monitor

## XI.) TECHNICAL SPECIFICATIONS ...

**General remark:** As far as Radon measuring devices are concerned, the accuracy of the measurements has to be better than ± 20 % according to guidelines published by the most renowned Radon Institutes (e.g. Federal Radiation Protection Office, Germany; National Radiation Protection Board, Great Britain; ). Due to our stringent quality assurance we guarantee that each of our RAMON 2.2 Radon Monitors complies with the requirement set forth by said institutes.

Wall power supply:  
Input: 100 - 240 V AC / 50 - 60 Hz / 150 mA  
Output: 18 V DC / 300 mA

RAMON 2.2 Radon Monitor:  
Input Voltage: 18 V DC  
Power consumption: max. 2 Watt  
Sensor: Silicon detector  
Full Scale Reading: 9999 Bq/m<sup>3</sup>  
Resolution: 1 Bq/m<sup>3</sup>  
Operating Environment: 5°C - 35°C

For any questions concerning your RAMON 2.2 Radon Monitor please contact:  
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