

I.) GENERAL ...

• Your RAMON 2.2 Radon monitor is delivered with a power supply unit and the instruction manual. Before using your Radon monitor, please carefully read all points of this instruction manual. Keep the instruction manual and the invoice for later reference.

•The Radon monitor is powered by an external wall power supply unit working on any mains input voltage from 100 V AC to 240 V AC 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 ...

• The Radon monitor may be placed on any flat surface (a table top, counter top,...) or mounted to a wall. Please, position the RAMON 2.2 out of the reach of children and pets!

Note: Don't place the RAMON 2.2 on metal surfaces (e.g. metal shelves) as this can disturb the measurement and lead to inaccurate results!

• The Radon monitor should be placed at least one meter from windows and 0.5 meters from the floor.

• Wireless phones and mobile phones generate strong electromagnetic fields that can interfere with the Radon measurement (see section VIII). The RAMON 2.2 Radon monitor should be placed at more than one meter distance from such devices!

• The ambient temperature at the measurement location should be within +5°C und +35°C. Don't place the instrument near heat sources, and avoid exposure to direct sunlight.

• Don't operate the RAMON 2.2 unit in humid places like bathrooms, kitchens and laundry rooms.

• Do not position the instrument near curtains, furniture, or other items that may inhibit the flow of air through the ventilation slots.

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 most of your time (bedroom, living room,...). As Radon seeps into your home from the ground, highest Radon levels can be expected in the basement. Therefore, Radon measurements in this area are also 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" mode: The displayed value for the long-term reading indicates the average Radon level over the entire measurement period since the last reset of the memory. A green LED light below to the letter "L" indicates this mode of operation.

If radon measurements are made for sufficiently long times (3 months or more), the long-term results can be compared with guidelines and recommendations for safe indoor Radon levels (see also section VII.).

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 written records.

"Short-term" mode: 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, naturally occurring variations of Radon concentrations or to evaluate the efficiency of radon remedial measures.

V.) OPERATION OF THE INSTRUMENT ...

1. Plug the power supply into a standard household mains socket.

2. Connect your RAMON 2.2 Radon monitor to the power supply unit. Since the Radon monitor does not have any ON/OFF button the Radon measurement starts automatically.

3. Each time the Radon monitor is connected to power it will do an initial self-test, briefly displaying various messages and codes during this sequence. These codes are not important and they can be ignored by the user. After a successful self-test the display will read "--". The green LED light next to the "S" or "L" indicates the active mode (long-term or short-term mode).

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 RAMON 2.2 Radon monitor samples indoor air in one-hour intervals and therefore, the displayed values are updated every hour.

7. When the instrument is disconnected from electric power, all accumulated measurement data remain stored in the memory. The interrupted measurement will continue automatically as soon as the instrument is reconnected to power.

Note: Average radon levels exceeding 9999 Bg/m³ can't be displayed by the RAMON 2.2. In such cases the displayed value will remain at "9999".

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

At the beginning of a new measurement (e.g. when starting a measuring in a new location), prior accumulated data need to be cleared from the instrument's memory. We therefore recommend taking periodic long- and short-term readings and keeping written records of former results.

Reset / Clear Function:

Press and hold the MENU button for 20 seconds! Indications like "aOFF" etc. that are displayed during this sequence are not important and they can be ignored by the user. After 20 seconds the display will read "CL" and the MENU button can be released. Once the memory has been cleared, the display will read "--" for 48 hours until enough samples have been taken to display the first reading. (See also section V.)

VII.) GUIDELINES AND RECOMMENDATIONS ON INDOOR RADON CONCENTRATIONS...

According to the "European Commission Recommendation EURATOM 90/143" annual mean indoor Radon concentrations should not exceed:

200 Bq/m³ in new buildings

400 Bq/m³ in existing buildings

Please note, that these guideline values refer to the annual mean Radon concentration. Since indoor Radon levels usually fluctuate considerably with time Radon measurements should be made for sufficiently long periods (at least several weeks per room) in order to obtain significant results that can be compared with guideline values.

If long term averages of Radon concentrations in your home exceed the guideline values we advise to contact your National Radiation Protection Institute for further advice!

VIII.) ERROR MESSAGES ...

Every 24 hours, the detector will do a self-test. If a malfunction is found by the self-test an error message will be permanently displayed:

"Err3" Noise Error: This error is mainly caused by electromagnetic interference from electronic equipment like mobile phones, generating strong electromagnetic radiation. To clear the error message, disconnect the Radon monitor from the power supply and re-connect it again. Move the Radon monitor 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 contact GT•Analytic 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 electric power. 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 of the following defects or incidents, immediately disconnect the RAMON 2.2 from electric power and contact GT•Analytic.

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

XI.) TECHNICAL SPECIFICATIONS ...

All RAMON 2.2 radon monitors undergo strict quality control procedures and individual calibration before sale. According to international standards, measurement uncertainties of $\pm 20\%$ are tolerated for Radon measuring systems. In compliance with our own quality standards we only supply our customers with Radon monitors that have deviated by less than $\pm 5\%$ to the reference radon concentration in our quality tests. The calibration can be traced back to the primary Radon standard of the PTB-Braunschweig -Germany.

Wall power supply:

Input: 100 - 240 V AC / 50 - 60 Hz

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/m³

Resolution: 1 Bq/m³

Operating Environment: +5 °C to +35 °C

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

GT-Analytic SARL
9bis, rue Grande
13410 Lambesc
France

Tel.: +33 (0)4 42 39 19 04

E-mail: office@gt-analytic.at • URL: www.radon.at

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RADON MONITOR 2.2



Manual