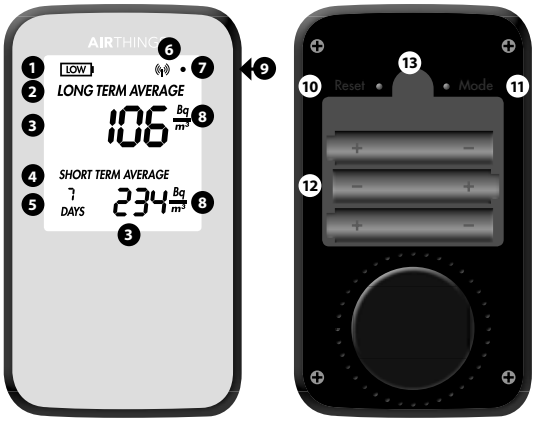
Corentium Plus
by Airthings

PROFESSIONAL DIGITAL RADON DETECTOR – USER MANUAL



KEY TO FIGURE

1. **Indicator for low battery level. Replace batteries when lit.**
2. **'LONG TERM AVERAGE' measurement mode**
3. **Measured value**
4. **'SHORT TERM AVERAGE' measurement mode**
5. **Measurement period for short term average. Alternates between 1 and 7 days**
6. **Indicator for USB connection to PC**
7. **The unit is active when flashing**
8. **Unit of measurement: Bq/m³**
9. **USB connection**
10. **'RESET'. Used to start a new measurement period.**
11. **'MODE'. Displays the number of days measured since the previous reset.**
12. **Battery compartment for 3 x LR03, alkaline AAA batteries**
13. **Opening the battery cover**

SPECIFICATION

Sampling Method	Passive radon diffusion chamber
Detection Method	Alpha spectrometry
Power Supply	3 AAA alkaline battery (LR03) > 18 months battery life-time
Dimensions (mm)	120 x 69 x 25,5
Weight (grams)	130 (incl. batteries)
Operation Environment *Temperature* *Relative Humidity*	 4 °C to 40 °C <85 % RH
Measurement Range *Detector* *Upper display limit*	 0 - 50 000 Bq/m³ 9999 Bq/m³
Measurement precision *7 days* *1 month*	 <12 % at (50 - 350) Bq/m³ <8 % at > 350 Bq/m³ <9 % at (90 - 220) Bq/m³ <6 % at > 220 Bq/m³
Measurement accuracy	± 5 Bq/m³ below 100 Bq/m³ ± 5 % above 100 Bq/m³
Diffusion time constant	25 minutes
Internal memory storage capacity	10 years at 1h time resolution
Temperature sensor *Range* *Resolution* *Accuracy*	 4 °C to 40 °C 0,336 °C ± 1 °C (typical)
Humidity sensor *Range* *Resolution* *Accuracy*	 5 % RH to 85 % RH (non-condensing) 0,5 % RH ± 4,5 % (in range 20-80 % RH)
Barometric pressure sensor *Range* *Resolution* *Accuracy*	 50,0 kPa to 115,0 kPa 0,06 kPa ± 1 kPa

SAFETY

Contact the seller if the product requires service or repairs. The front or back cover must not be opened.

Avoid subjecting the unit to shock, impact, pressure, vibrations, dust and moisture. Condensation can occur if the unit is moved from a location with high atmospheric humidity to a cold location. If condensation occurs, remove the batteries and leave the unit in a dry environment for 2 hours. The unit must not be exposed to direct sunlight for extended periods. The detector must be stored under dry conditions.

Use only batteries of type LR03, alkaline AAA batteries. The batteries must not be exposed to fire or other extreme heat. The battery terminals must not be touched, and they must be kept free from dust, sand, liquids and other foreign objects.

LIFETIME

The detector is tested and quality assured by producer. It is recommended that the detector is powered continuously, and that the batteries replaced when its low level is indicated on the display.

NOTE: The detector meets the specified accuracy, unless it continuously measure high radon levels (a few thousands of Bq/m³) over years.

GETTING STARTED

- Insert the supplied batteries. Please observe correct polarity of your batteries and make sure you install them in the correct orientation as advised by the marking in the bottom of the battery compartment. The display shows a 30 second start up sequence when the batteries are inserted (or after a RESET). Then, both the sampling of the indoor air and the radon level calculation are started. In this phase the display shows from 4 to 1 flashing dashes indicating how long it is left to the detector begins to show radon levels. Depending on the radon level this phase will take from 6 to 24 hours. The first days the result must only be considered as an indication of the radon level. The precision of the measurement increases with longer measurements.

- A measurement is started by:
  - inserting the batteries OR
  - pressing RESET button.
- The detector is self-testing for a few minutes after the start.

- The unit should not be exposed to direct sunlight or electromagnetic radiation; it should be positioned lying flat at least 25 cm from the nearest wall, at least 50 cm above the floor, and at least 150 cm from the nearest door, window or ventilation device.

- The RESET and MODE buttons should be pressed with a ball-point pen or similar.

HOW TO USE THE DETECTOR

- The long term average (LONG TERM AVERAGE) is the average radon value since last reset or average for last 12 months if one has measured more than 12 months (updated once every 24 hours).

- The short term average (SHORT TERM AVERAGE) alternates between showing the radon value over the last day (1 DAY – updated every hour) and over the last 7 days (7 DAYS – shown after 1 week and updated once every 24 hours).

The long term average is used to identify any potential health risk , and for continuously detectoring that any installed mitigation measures works properly. The short term average is used primarily to see the effect of measures to reduce the radon level – for example by increasing the ventilation.

The building can be diagnosed by taking measurements for one week. This should preferably be followed by long term measurement in the room which has the highest radon value. For long term measurement period and action level it is recommended to follow the guidelines from the national radiation authority.

When the detector is moved to another room, a new measurement should be started (RESET).

The MODE button when pressed once, it will display the number of days of the on-going measurement: since the last RESET or since the Power ON. This information is displayed on the lower half of the screen for 20 seconds, after which the screen reverts to the regular display.

When the detector is connected to PC with the USB cable, it displays the connection indicator and the last digits of its serial number. Read the User Manual of the CRA software. It is a tool for detailed analysis of the measurement results.

RESPONSIBILITY

The detector and the batteries must not be disposed of as ordinary household waste. It is the user's environmental responsibility to ensure that electronic equipment and batteries are disposed of in accordance with national regulations. Users should contact the seller or their local authority for information about environmentally friendly waste disposal.

Corentium plus has a 1-year warranty against system failure. In the event of incorrect use or operation of the detector, Airthings AS cannot be held responsible for any losses resulting from failure or from the loss of measurement data.

Airthings AS, Oslo, Norway. v 1.0

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