Quick guide

RadonTec AlphaSniffer

Step 1 : Preparation

1. Download the "Radon Sniffer" app from the Google Play Store or App Store.
2. Start app and AlphaSniffer.
3. Connect the AlphaSniffer via bluetooth to the app.
4. Let the AlphaSniffer run for about 3-5 minutes in a place with little or no radon so that it can calibrate itself.
5. Start with sniffing.

Step 2 : Sniffing

1. Let the AlphaSniffer suck in air for at least 30 seconds (recommendation is about 90 seconds) where radon entry points are suspected.
2. Use the app to check if there is a significant increase in radon levels.
3. If values do not rise significantly after 120 seconds you can move on to the next measuring point.
4. When high values were sampled the device will need some time to recover.
5. In case of very high radon concentrations were sampled before there might be larger deviations shortly afterwards within lower radon ranges, i.e. round about 300 Bq/m³. This is due to the subsequent decays which continue to take place for a few further minutes inside the measuring chamber.
6. Do not switch off the device during sampling (the device has a battery life of approx. 15 hours).

Step 3 : After sniffing

1. After sampling let the measuring chamber flush with fresh air for at least 5 minutes or longer. To do this, simply let the device run in fresh air or in a room with very low values for about 5 minutes or longer.
2. There is a dust fleece in the inlet pipe you can change if it becomes very dirty.

„Radon Sniffer" App

With the app "Radon Sniffer" you can read out the values that were detected during the sniffing (see following figure).

You should pay attention to the following special features:
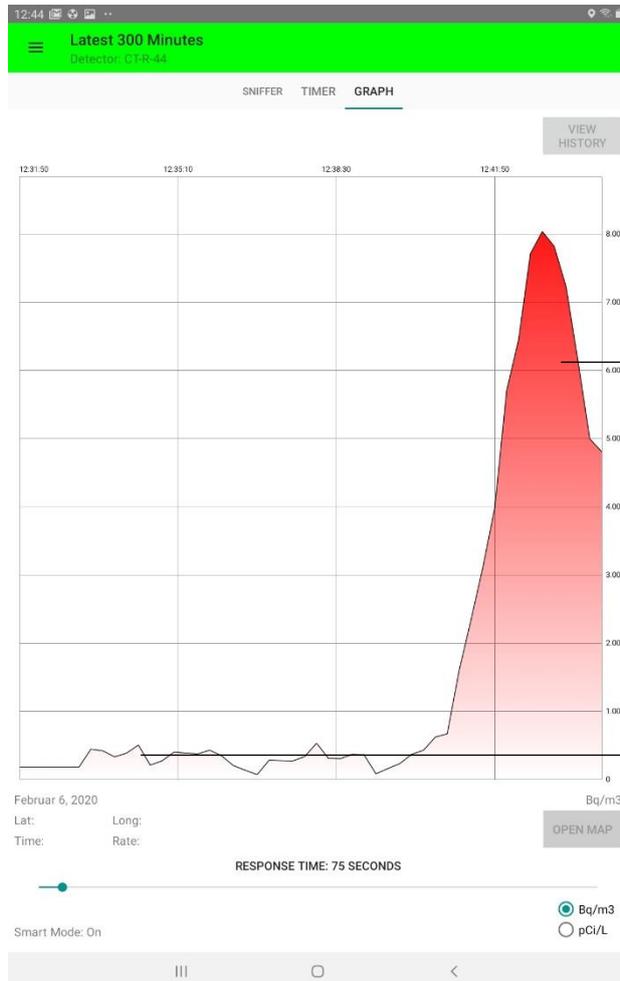
In case of high radon progeny it may take several minutes until the final measurement value is reached.

In the lower measuring range there may be stronger fluctuations which are quite normal.

„Radon Sniffer" app with time resolved sampling data

Flow rate intervals at low rn-222-concentrations

The AlphaSniffer works based on a sampling principle so that 1 radioactive decay within 15 sec corresponds with 340 Bq/m³.

In case of lower rn-222-conentrations the sniffer statistically is not able to detect even 1 decay within the 15-sec-sampling-interval.

But a decay frequency of less than 1 cannot be shown.

Additionally radon decay doesn't occur in a steady way but unregularly, occasionally.

If you'd measure at concentrations < 340 Bq/m³ using the 15-sec-sampling-interval there would probably be shown "0" decay by the device , sometimes maybe „1" (in the display „340 Bq/m³ would appear accordingly), „2" (display: Appr. 700 Bq/m³) or even „3" (Display: Round about 1.000 Bq/m³).

The short sampling interval of only 15 sec may lead to jagged readings. The 15 second scale should only be used when you are in high levels. Since radioactive decay is random, you need to count long enough to get a statistically significant number of counts. To get reasonably stable readings, you have to wait long enough to count at least about 10 alpha particles (that gives you about a 30-40% statistical error).

Sampling interval at a rn-222-concentration of **30 Bq/m3**: Appr. **30 min**.
Sampling interval at a rn-222-concentration of **150 Bq/m3**: Appr. **5 min**.
Sampling interval at a rn-222-concentration of **3400 Bq/m3**: Appr. **15 sec**.

In the app
any preferred sampling interval can be fixed as average (responsetime-grafter).

At the Sniffer
you can select between the intervals *15 sec* = SHORT (to detect so called „hot spots") und *5 min* = LONG (e.g when you are measuring the ambient air in a house that needs to be mitigated).

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