

# RTM 2200

## Radon/Thoron Monitor



### Applications:

- for measurements of the activity concentrations of airborne **radon ( $^{222}\text{Rn}$ ) and thoron ( $^{220}\text{Rn}$ )** in homes, at workplaces (including underground), field measurements
- Scalable multi-parameter measuring station
- for environmental monitoring
- for geophysical analysis (volcano monitoring, earthquake prediction)
- radon determination in water analysis
- automation & control
- gamma spectrography (optional)
- for protection against radioactivity
- building surveillance

### Features:

- diverse connection options for additional sensors and actuators for complex measuring tasks
- connection of additional radon chambers (soil gas probe, room air sensor) for measurements at different locations with one monitor
- optional gamma detector (NaJ)
- measuring principle of high-voltage deposition resulting in excellent sensitivity
- desiccant cartridge not necessary
- DAkkS-accredited calibration according to DIN EN ISO/IEC 17025:2018

Closer to your application

<b>Radon measurement</b>	<i>Internal</i>
<b>Detector type</b>	4 x 200mm <sup>2</sup> Si-detector with HV chambers
<b>Internal volume</b>	250mm <sup>3</sup> (total volume of the internal air loop)
<b>Range</b>	1 ... 10 000 000 Bq/m <sup>3</sup>
<b>Accuracy</b>	<=5 %
<b>Sensitivity</b>	3 / 6.5 cpm/(kBq/m <sup>3</sup> ) for fast / slow mode
<b>Response time</b>	15 / 120 min for fast / slow mode
<b>Results / Analysis</b>	radon concentration fast (excl. <sup>214</sup> Po) and slow (incl. <sup>214</sup> Po) thoron concentration storage of time distribution and spectra
<b>Pump</b>	high quality membrane pump flow rate 0.3 l/min controlled by processor
<b>Gamma probe (option)</b>	<i>Connected by a cable to front panel of the RTM 2200</i>
<b>Detector</b>	NaJ(Tl) with integrated PMT and HV supply Scintillation crystal 2" x 2
<b>Energy range</b>	25 keV – 3 MeV
<b>Resolution</b>	<7.5% (Cs-137)
<b>Results / Analysis</b>	local dose rate, net activity of six user defined nuclides storage of time distribution and spectra
<b>Dimensions of probe</b>	diameter 60 mm, length 260 mm connection cable 5 m (optional 10 m)
<b>Additional radon chambers</b>	<i>Connected by a cable to front panel of the RTM 2200</i>
<b>Soil gas probe</b>	stainless steel probe for permanent installation in the soil, additional sensors for humidity and temperature (for specification see data sheet)
<b>Indoor air sensor</b>	like internal radon chamber, pump or diffusion (for specification see data sheet)
<b>Results / Analysis</b>	storage of time distribution and spectra
<b>Additional sensors</b>	
<b>Standard</b>	rel. humidity 0 ... 100%, accuracy ± 2% temperature -20 ... 40°C, accuracy ± 0.5°C bar. pressure 800 ... 1200mbar, accuracy 0.5% MW flow rate 0 ... 0.6 l/min, accuracy ± 5% humidity/temperature sensor inside the int.air loop

<b>Air analytics (option)</b>	CO, CO <sub>2</sub> , CH <sub>4</sub> , combustible gases etc., various ranges available
<b>Water analytics (option)</b>	pH-value, redox potential, conductivity etc.
<b>Process (option)</b>	pressure, differential pressure, flow rate, stream velocity, soil moisture etc.

## General

<b>Sampling</b>	simultaneous sampling of all detectors/sensors with respect to the selected sampling program
<b>Sampling intervals</b>	storage of up to 16 sampling intervals with up to 32 steps (defined or infinite repetition) sampling interval from one second to weeks
<b>Data storage</b>	SD Card, 2 GB (bigger cards can also be inserted)
<b>Operation / Display</b>	touchscreen 6 x 9cm
<b>Interfaces</b>	USB, RS232, optional LTE-modem and other
<b>Power supply</b>	internal rechargeable battery 14,6V mains adapter 100-240V ~50/60Hz, 1,8A
<b>ATEX category</b>	no
<b>Dimensions / Weight</b>	235mm x 140mm x 255mm / approx.. 6kg
<b>Software</b>	dVISION: control and data transfer, visualization, data management dCONFIG: system configuration, creating / changing cycles (also via Net Monitors) dLIBRARY: Nuclid library for NaJ gamma probe (option)
<b>Extensions</b>	Available at internal connectors: 8 analogous inputs, 3 counter inputs, 2 status inputs, 6 switch outputs, clock switch, PID regulator/analogous output
<b>GPS (option)</b>	GPS coordinates are recorded and stored together with the measurement results. GIS compatible *.kml files can be exported (can be opened by Google-Earth). antenna connected by cable
<b>Environmental conditions</b>	0...40 °C 0...95 % rH, non-condensing 800...1100 mbar

**Accessories****Scope of delivery**

charging adapter  
USB , RS-232 cables  
dust filter (2 pcs)  
PVC-tube (1,5 m)  
fuse (2 pcs)  
transport case  
manual & software (electronical)  
DAkkS-accredited calibration certificate according to  
DIN EN ISO/IEC 17025:2018

**Optional**

soil gas kits (pile drive probe or packer probe)  
exhalation bonnet  
AquaKit for measurements of radon in water  
measuring case  
water ingress protection