

RTM 2300

Spectroscopic Radon and Thoron Monitor



Applications:

- Radon and thoron measurements in indoor air, in soil gas, in ventilation ducts, etc.
- Search for radon entry paths
- Quality-assured radon soil air measurements
- Direct display and temperature-compensated measurement of radon content in water samples
- Determination of surface exhalation rates
- Process monitoring in the areas of NORM, TNORM, and nuclear medicine

Features:

- Continuous spectrometric measurement of radon and thoron
- High sensitivity, no contamination from Po-210
- Precisely controlled flow with integrated robust, durable, and quiet pump for reproducible thoron measurement

Closer to your application

- “Soil Gas” version with determination of soil permeability during radon soil gas measurement, fresh air flushing, and quality assurance via integrated CO2 sensor
- Protection against water ingress during soil gas and water measurements
- Up to four days of battery life
- Built-in GPS receiver
- Colour touch screen with graphical display of spectra and measurement series
- Outstanding connectivity for system integration and connection of accessories
- Flexible, user-customizable alerting and warning system
- High data security thanks to proprietary controller architecture (no integrated PC solution with operating system)
- DAkkS calibration certificate for radon activity concentration
- Meets all requirements of DIN/IEC 61577-2
- Compatible with all relevant measurement methods in accordance with DIN/ISO 11665

Specifications:
Radon measuring chamber

Measurement principle	Measuring chamber with high-voltage deposition on silicon detector and alpha spectroscopy
Detector	4 x 200 mm ² Si detector with HV chambers
Intrinsic background	< 0.2 Bq/m ³
Nominal flow rate	0.5 l/min
Internal volume	260 ml (total volume of the air circuit)
Measuring range	1 ... 10 000 000 Bq/m ³
Intrinsic accuracy	<= ±2,5 %
Sensitivity	4.2 or 8.5 cpm/(kBq/m ³) for fast or slow mode, respectively
Response time	15 or 120 minutes for fast or slow mode
Measurement/Analysis	Radon air concentration fast (excluding Po-214) and slow (including Po-214) Thoron air concentration Radon concentration in water samples

Internal sensors

Standard device	Relative humidity 0 ... 100 %, accuracy ± 2 % Temperature -20 ... 40 °C, accuracy ± 0.5 °C Bar. Pressure 800 ... 1 200 mbar, accuracy 0.5 % MW Flow rate 0 ... 4 l/min, accuracy ± 5 % Humidity/temperature sensors in the air circuit
Version Soil Gas	Differential pressure 0 ... 10 mbar (for high permeability) Differential pressure 0 ... 600 mbar (for low permeability) CO2 sensor 0 ... 10 % (VAISALA)
Optional	Additional sensors with analogous or pulse signals can be connected to the AUX1 and AUX2 sockets, e.g., local dose rate probe, weather station, and much more.

General information

Measurement	Simultaneous measurement with all detectors/sensors according to the selected measurement program
Measurement programs	Storage of up to 16 different measurement programs with up to 32 steps (defined or unlimited repetition) Time interval 1 second to weeks
Data storage	Micro SD, 32 GB
Operation/Display	4,7" Colour Touch-Screen
Interfaces	2 independent digital communication channels Channel 1: USB, RS 232, RS 485 B Channel 2: RS 485 A with MODBUS RTU, WLAN (optional) 2 analogous outputs, assignable to any measured value and measurement range
Power supply	12 V NiMH rechargeable battery (>72 hours continuously) Plug-in power supply 100 - 240 VAC $\sim 50/60$ Hz, 18 VDC / 1.8 A
Dimensions/Weight	235 mm x 140 mm x 255 mm / 6 kg
Software	dVISION

GPS	Highly sensitive GPS receiver usually provides position even indoors; coordinates are stored simultaneously with the measured values. Map view in dVISION, export of GIS-compatible KML files.
Environmental conditions	0 ... 40 °C 0 ... 95 % RH, non-condensing 800 ... 1 100 mbar
Scope of delivery	Charging power supply adapter External Temperature/Humidity sensor USB cable Dust filters (spare) Hose 6.35 mm x 3.18 mm (1.5 m) Fuse (spare) Transport case Manual & software (on https://sarad.de) DAkkS-compliant calibration certificate according to DIN EN ISO/IEC 17025:2018
Optional accessories	Water ingress protection (standard on "Soil Gas" version) Soil test set (impact probe and/or packer probe) Exhalation bonnet Aqua kit for DACM32 for measuring radon in water Decay product measuring head for grab sampling (Markov) Measuring case for field applications with connections for tubes and power supply