

Thoron Scout

Electronical Radon-/Thoron-monitor



Applications:

- for simultaneously measurements of the activity concentrations of airborne **radon (^{222}Rn) and thoron (^{220}Rn)** in homes, workplaces, etc.
- eminently suitable for the direct control of ventilation systems

Features:

- simultaneous activity concentration measurement of radon (^{222}Rn) and thoron (^{220}Rn) based on a diffusion type measurement chamber
- thoron sensitivity is comparable with the one of pump-based instruments
- more than 2000 data records including a complete alpha spectrum can be stored
- sensors for barometric pressure, temperature and humidity are integrated
- mains or battery powered
- a potential-free switch contact for alert or ventilation control
- DAkkS-accredited calibration according to the DIN EN ISO/IEC 17025:2018

Radon measurement

Range	1 ... 10.000.000 Bq/m ³
Measurement principle / detector	diffusion optimized HV-chamber with a semiconductor detector <ul style="list-style-type: none"> - spectrometric analysis of short-living thoron and radon progenies - measurement of thoron (²²⁰Rn) concentration - fastest possible response time - 100% quality assurance through output of alpha spectrum for each interval - no contamination with long-living radon progenies - high sensitivity with small chamber volume (only ca. 60 ml) - doubling of sensitivity for radon in slow mode through inclusion of ²¹⁴Po - no influence of humidity on sensitivity
Sensitivity	thoron: 0,42 imp/min @ kBq/m ³ radon: 0,85/1,5 imp/min @ kBq/m ³ (fast/slow-mode)
Accuracy	<=6%
Stat. error	radon: 200 Bq/m ³ with 20% stat. error (1σ) at 1h interval 1.000 Bq/m ³ with a stat. error (1σ) < 10 % at 1h interval 100 Bq/m ³ with 17% stat. error (1σ) at 3 h interval thoron: 200 Bq/ m ³ with 25% stat. error (1) at 4h
Response time	immediately for thoron, 95% of the final value after 12 minutes in fast mode for radon
Internal Sensors	rel. humidity, temperature, bar. pressure, tilt
Integration interval	1 minute to 255 minutes, adjustable in 1 minute steps

Instrument

Data storage	non-volatile memory for 2047 data records, each incl. alpha spectrum integrated real time clock
Power supply	3,3 V with 2 x D batteries, NiCd, NiMH or alkaline and mains, battery life >30 days
ATEX category	no
Interfaces	RS232, USB for Setup/data transfer
Switching output	optical relay with potential free contacts (max 60 V, 400 mA, peak current 1.5 A)
Operation	display with backlight (4 lines 20 characters) one button operation (with Lock-function) acoustical signal for alert function
Environmental conditions	
Temperature	0 ... 40°C
Rel. humidity	0 ... 95%, non-condensing
Bar. pressure	800 ... 1.100 hPa
Dimensions	175 x 135 x 90 mm
Weight	1.100 g (incl. batteries)
Software	Radon Vision
Scope of delivery	USB cable Mains adapter 2 batteries type D Transport case Software & manual (CD) DAkkS-accredited certificate of calibration according to DIN EN ISO/IEC 17025:2018