**AlphaGUARD**

The reference in professional radon measurement

- High sensitivity and fast linear response at
  2 ... 2 000 000 Bq/m³, 5 cpm at 100 Bq/m³
  0.05 ... 54 000 pCi/l, 5 cpm at 3 pCi/l
- Multiparameter features
- Long-term stable calibration
- Maintenance-free operation
- Complete system for measuring
  - Radon and thoron in air, soil gas and building material
  - Radon in water
  - Radon progenies
- Direct RS232 or USB interface to DataEXPERT, options for remote data transmission

AlphaGUARD is a portable, battery- or net-operated radon monitor with high storage capacity

AlphaGUARD incorporates a pulse-counting ionization chamber (alpha spectroscopy). Through optimal geometry of the chamber and intelligent signal evaluation this radon monitor is suitable for continuous monitoring of radon concentrations between 2 – 2 000 000 Bq/m³. AlphaGUARD offers high detection efficiency, a wide measurement range, fast response and permanent, maintenance-free operation with long-term stable calibration. No pump is required when operating in diffusion mode (e.g. long-term monitoring) and the instrument is insensitive to both, high humidity and vibrations.

In addition to the radon concentration in air AlphaGUARD measures and records also simultaneously ambient temperature, relative humidity and atmospheric pressure with integrated sensors. By combining the monitoring of radon with these associated environmental parameters it is possible to draw valid conclusions regarding the temporal and spatial distribution of the radon gas. This is of significant benefit in radon mitigation.

AlphaGUARD is both suited for short- or long-term examination inside (e.g. in buildings) as well as outdoor. It can also be used for permanent surveillance of radon levels in industrial plants or exhaust air ducts. As a radon-sensitive control unit (threshold value) it is useful in air-conditioning equipment.

AlphaGUARD has gained high acceptance among radon specialists worldwide. Meanwhile more than 1700 units are in use and have proved its outstanding features. Due to comprehensive accessories AlphaGUARD monitors render service for multiple applications (research, radon mitigation, stack monitoring, uranium and rare earth mining, water works, seismic surveillance, radioactive waste management …) also in complete networks.

Among the multitude of users more than twenty renowned calibration laboratories are using this instrument as a reliable reference machine for their highly sophisticated routine calibration works.
### PHYSICAL CHARACTERISTICS

- **Measurement range:**
  - P30: 2 ... 30 000 Bq/m³ (0.05 ... 800 pCi/l)
  - P2000, PQ2000, PQ2000 PRO (RnTn): 2 ... 2 000 000 Bq/m³ (0.05 ... 54 000 pCi/l)
- **Type of radon detector:** ionization chamber (HV = 750 VDC)
- **Operation mode:** 3D alpha spectroscopy and current mode
- **Total/active detector volume:** 0.62 liter / 0.56 liter
- **Detector filling mechanisms:** Design optimized for fast passive diffusion (10/60 min cycle)
- **Instrument calibration error:** Flow mode (1/10 min cycle) (PQ2000 PRO) Rn/Tn mode (10min cycle) (PQ2000 PRO)
- **Detector efficiency:** 3% (plus uncertainty of used reference)
- **Intrinsic effect (delivery status):** 1 cpm at 20 Bq/m³ (0.55 pCi/l) – check brochure for sensitivity of Rn/Tn mode
- **Storage capacity:** < 1 Bq/m³
- **Internal sensors:**
  - Air temperature: -15° C ... + 60° C
  - Air pressure: 800 mbar ... 1050 mbar
  - Air humidity: 0% ... 99%
- **Relocation (anti-tamper proof):**

### ENVIRONMENTAL CHARACTERISTICS

- **System operating range:**
  - Operating temperature: -10° C ... +50° C (+14 ... 122° F)
  - Air pressure: 700 mbar ... 1100 mbar
  - Relative humidity: 0% ... 95% RH (non condensing)

### MECHANICAL CHARACTERISTICS & DISPLAY

- **Dimensions (excluding handle):** 120 x 315 x 175 mm (H x W x D)
- **Weight:** 4.5 kg

### ELECTRICAL CHARACTERISTICS

- **Power supply:** battery or external mains 120 V– ... 230 V–
- **Battery:** rechargeable, allows > 10 days autonomous operation, > 30 days using external booster (option)

### INTERFACES

- RS232 serial output, USB using serial to USB converter, Ethernet/LAN via ComServer Interface (option)
- 2 analogue inputs for external sensors: 0 V ... 2.5 V (10 kΩ) (PQ2000 PRO)
- DataEXPERT software for data collection, management and professional analysis (Windows based)

### ACCESSORIES & RELATED PRODUCTS

- Accessories for measurement of radon in air, soil, water, building materials, for radon progenies as well as for radon/thoron discrimination
- For PQ2000 PRO:
  - Inbuilt TTL board for simultaneous measurement of the radon progeny concentration using AlphaPM
  - Integrated GM tube (20 nSv/h ... 10 mSv/h) for gamma dose rate surveillance
- Remote data transmission based on state-of-the-art cable bound and wireless IT techniques