southern scientific

ALPHAGUARD
FOR RADON MEASUREMENT

FEATURES

- High sensitivity and fast linear response at 2-2,000,000 Bq/m^3
- Multiparameter features
- Long-term stable calibration
- Maintenance-free operation
- Complete system for all Rn measurement applications
- Direct RS-232 interface to DataEXPERT
- Ethernet/LAN interface available

NEW ACCESSORY

AlphaPM
RADON PROGENY METER

For continuous measurement of radon decay product concentration

AlphaGUARD

professional radon monitoring

Features

- Battery or mains powered measurement of radon in air, soil, water, building materials
- Simultaneous monitoring of temperature, pressure, humidity and optionally radon progenies
- Optimal sensitivity: Alpha spectrometric detector with 5 cpm at 100 Bq/m³ (3 pCi/l)
- Linear response from 2 – 2.000.000 Bq/m³ (0.05 – 50 000 pCi/l)

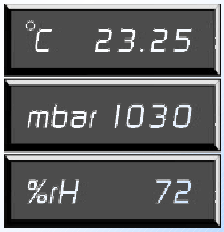
Additional benefits:

- Simultaneous measurement of

air temperature

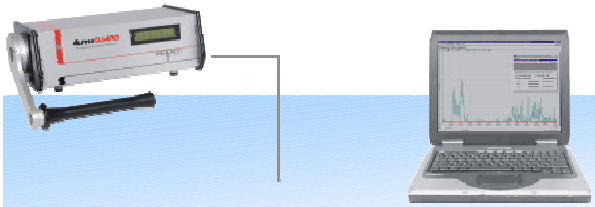
air pressure

air humidity



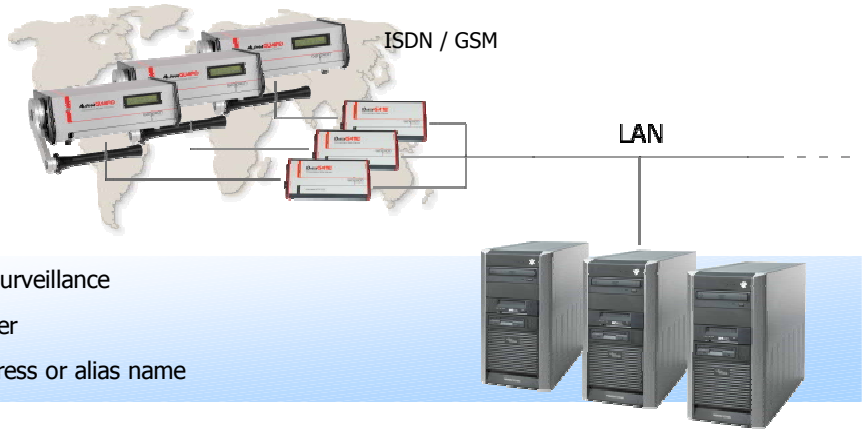
relocation
(anti-tamper proof)

Basic Configuration



- Communication via COM-port
- Reduced efforts for installation
- State-of-the-art evaluation software and database

LAN/WAN Integration (Option)



- Easy integration in networks for surveillance
- Access possible from any computer
- Addressing of monitor via IP-address or alias name

Quality on highest level

- Long time stable calibration factor (guaranteed 5 years)
- Calibration traceable to different national standards (PTB, NIST, NPL)
- Inbuilt quality assurance system for permanent validation of system operation and data
- Automatic background correction and contamination notification

↳ *AlphaGUARD* is suitable as reference device

Application fields

- Short- and long-term monitoring of radon concentration indoor and outdoor, water and soil gas analysis
- Radon surveillance and mitigation at workplaces (according to valid radiation protection regulations)
- Geological survey, e.g. vulcano watching, earth quake surveillance
- As reference device for calibration of other active and passive radon detectors, reference standards for traceability to NIST are available

Basic Equipment

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

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.

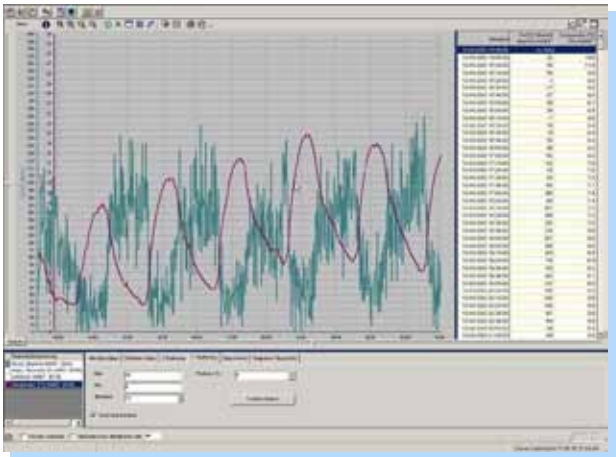
Since 1992 *AlphaGUARD* has gained high acceptance among radon specialists. Meanwhile **more than 1000 units** are in use worldwide and have proved its outstanding features. *AlphaGUARD* monitors render service for multiple applications. Among the multitude of users more than twenty renowned calibration laboratories prefer this instrument as a reliable reference machine for their highly sophisticated routine calibration works.

The basic configuration consists of an ***AlphaGUARD*** *Radon Monitor* and the ***DataEXPERT*** database software package. As a basic cost-effective entry into the *AlphaGUARD* range of equipment the model P30 is offered.

Optionally ***DataGATE***, a LAN interface with embedded webserver, is available for connecting the *AlphaGUARD* to networks.

DataEXPERT allows configuration of *AlphaGUARD* via RS-232 as well as downloading, administrating, evaluating and output of data by PC:

- Holds all data measured by the *AlphaGUARD* (Rn, Rn-error, air temperature, air pressure and air humidity, system status etc.) in a powerful database
- Data of several parameters can be displayed and zoomed at the user's discretion
- Online function for real-time transfer of measured data
- If required *DataEXPERT* converts data automatically into ASCII-format; thus measuring values can directly be transferred into commercial spread-sheet programs (for example MS-EXCEL)



AlphaGUARD – a versatile monitoring system

For covering all sorts of radon measuring tasks the *AlphaGUARD PQ2000 PRO* fits best. By hard- and software the *PRO* model is capable for operating in two alternative modes:

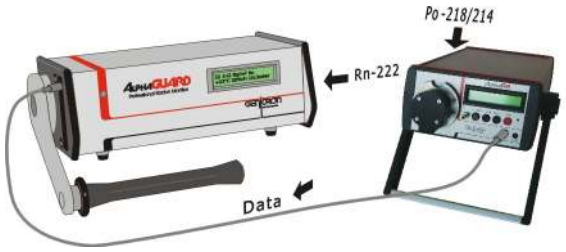
- **diffusion mode** with a 10 - resp. 60 min. measuring cycle
- **flow mode** in a 1 min. resp. 10 min. measuring cycle.

The *PRO* model's processor has twice the capacity of the standard processor providing extended functions, expanded memory and additional analogue and digital inputs.

This extra features allow the *PRO* model to form the core of a powerful and extendable system suitable to cover all upcoming radon measuring tasks:

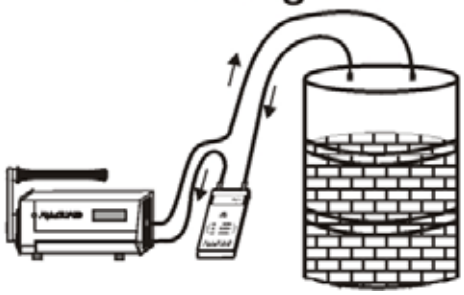
Radon in air

Radon and Rn progenies

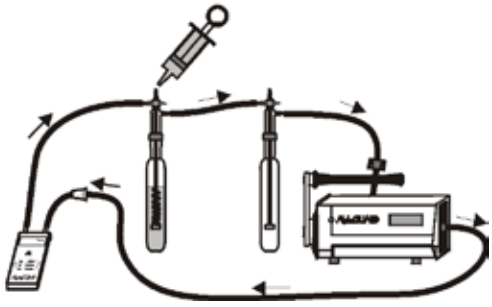


Radon in soil

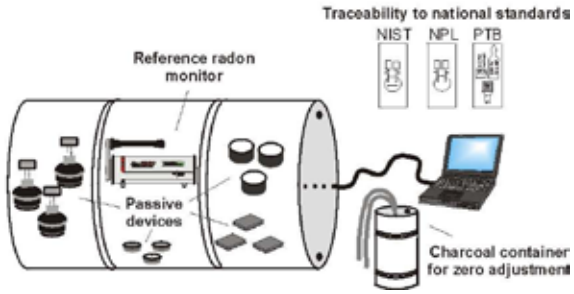
Radon in building materials



Radon in water



Radon calibration



	P30 / P2000 / PQ2000 / PQ2000 PRO	PQ2000 PRO (only)
Type of radon detector	ionization chamber HV = 750 VDC	
Mode of operation	3D alpha spectroscopy and current mode	
Total / active detector volume	0,62 liter / 0,56 liter	
Detector filling mechanism	design optimized for fast passive diffusion (10/60 min cycle)	flow mode (1/10 min cycle)
Instrument calibration error	3% (plus uncertainty of primary standard)	
System linearity error	< 3% within total range	
Transient response function (time delay)	signal > 30% after 10 min / signal > 70% after 20 min / signal > 90% after 30 min	
Sensitivity of detector	1 CPM at 20 Bq/m³ (0,55 pCi/l)	
Background signal due to internal detector contamination (delivery status)	< 1 Bq/m³ (0,03 pCi/l)	
Operating range	-10 ... +50 °C (+14 ... 122°F) / 700 ... 1.100 mbar / 0 ... 99 %rH	

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