BARASOL Multi Sensors
BMC 2

FOR THE CONTINUOUS MEASUREMENT OF THE RADON ACTIVITY CONCENTRATION.

Applications :

- **Measurements of radon activity concentration in the ground:**
  - **geophysical studies,**
  - **earthquake predictions,**
  - **predictions of volcanic eruptions.**
- **Measurements of radon exhalation rate,**
- **Measurements of gas velocity in soils,**
- **Air monitoring of the atmosphere in confined environments.**

- **Instrument designed to be used in difficult environments**
- **Passive measurement, no disturbance of the environment.**
- **Simultaneous measurement of radon and of the main meteorological parameters:**
  - **temperature and atmospheric pressure**
  - **rainfall measurement (as an option).**
- **Acquisition rate parameters adjustable for 1 mn up to 240 mn.**
- **1 year of independent operating time for power supply and memory capacity.**
- **Power supply from 2 x 1.5 Volt alkaline batteries.**
- **Sensor parameters set by *RnView2* PC software (see technical data sheet).**
- **Monitoring of battery voltage and shocks.**

Compliant with the requirements of standard ISO 11665-5.

ALGADE INSTRUMENTATION
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MEASUREMENT OF RADON:

The radon enters a detection volume through three cellulose filters which trap all the solid decay products.

The sensor is an implanted silicon detector with a depleted depth of 100 µm and 400 mm^2 of sensitive area. It authorises the counting by spectrometry of atoms of ^{222}Rn and its decay products created in the detection volume (window set at between 1.5 MeV and 6 MeV).

The calibration of the sensor enables the radon activity concentration to be calculated.

Radon: 50 Bq.m-3 per imp.h-1 (typically)
Range from 0 to 1 GBq.m-3

References to order

1- Product	Reference
BMC2	P-542-120
USB/RS232 Converter	P-590-110

The sensor is delivered complete with:

- a protective cover with shoulder strap for easy carrying on site,
- a certificate indicating the radon calibration coefficient.
- a user manual

Specifications :

Quantities measured:

Internal :
- ^{222}Rn,
- temperature,
- atmospheric pressure,
- shocks, battery voltage.

External with options :
- 2 additional ^{222}Rn channels
- a rainfall measurement channel

Temperature: accuracy
0.05°C (relative)
0.1°C (absolute)

Atmospheric pressure: 0.1 hPa (relative)
1 hPa (absolute) from 500 to 1500 hPa

Shocks: binary detection,
The sensor is set for a sensitivity equivalent to that of the radon sensor (the silicon detector generating spurious pulses in the event of a shock)

Battery voltage: 0.1 V (resolution)
Rainfall measurement: 0.2 mm of water (resolution)

Memory capacity:
1 MByte Flash memory (saves the data if there is no power supply).
Storage capacity of more than 1 year for a measuring cycle of 15 mn.

Measuring cycle:
Adjustable parameters: 15 to 240 minutes.

Power supply:
D type batteries
- 2 alkaline batteries (10 months operating time)
- 1 Lithium battery (10 months o.t)

2 D type batteries
- 1 lithium (18 months o.t)

Casing :
Casing made of fibreglass and corrosion-resistant stainless steel.
Lining: 5 µm of copper + 3 µm of nickel.
2 Grab handles.
Protection index: IP 68.

Operating temperature:
-20°C to +70°C with alkaline batteries.

Dimensions:
Height : 489 mm
Diameter : 62 mm

Weight : 2 kg. (with 2 alkaline batteries)

Parameter setting and data retrieval:
RS232 connection (19200 Bauds).
Hyperterminal or,
PC software for Windows 98SE, 2000, NT, XP.

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