

AlphaS

Professional radon monitor

Key features

- Good sensitivity and fast linear response at 10 ... 200 000 Bq/m³, 1 cpm at 60 Bq/m³, 0.27 ... 5 400 pCi/l, 1 cpm at 1.65 pCi/l
- Multiparameter features / flow & diffusion operation
- Long-term stable calibration
- Complete system for measuring Radon in air, water, soil gas and building material



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CHARACTERISTICS

Type of radon detector	Impulse Ionization chamber, HV ≈ 750 VDC
Mode of operation	3D-alpha spectroscopy and current mode
Total detector volume	0.35 liter (21 cubic inches)
Active detector volume	0.22 liter (13 cubic inches)
Radon progeny filter, entry window	Fine dust filter (retention coefficient > 99.9%)
Detector filling mechanism	Optimized design for fast passive diffusion or Flow through operation with internal pump
Transient response function (time delay)	Signal > 30% after 10 min Signal > 70% after 20 min Signal > 90% after 30 min
Detector signal acquisition	Fast digital signal sampling network using three separate ADC channels
Spectral signal extraction	DSP (Digital Signal Processing), online cross-correlation algorithms
Detector sensitivity Rn	1 cpm at 60 Bq/m ³ (or at 1.65 pCi/L)
Background signal due to internal detector contamination	< 1 Bq/m ³ (0.03 pCi/L)
Radon (Rn-222) measurement range	10 Bq/m ³ ... 200 000 Bq/m ³ (<0.05 pCi/L ... 5 400 pCi/L)
LCD display resolution	1 Bq/m ³ (0.01 pCi/L)
Fold-back protection	> 200,000 Bq/m ³ (> 5,400 pCi/L) verified
Measurement modes and cycles	1 min, 10 min (diffusion) 1 min, 10 min (flow)
Flow range of the integrated pump (unload)	Flow-regulated: 0 – 1.5 L/min
Data capacity (non-volatile)	16 Gb Up to 60,000 measurement points ~ 40 days for 1 min measuring cycle ~ 400 days for 10 min measuring cycle
Interfaces / Graphic display resolution	WIFI, USB, Ethernet/ 160 x 104 pixels
Battery life (diffusion mode)	Up to 2.5 days
Battery life (flow mode)	(At flow 100% unload) Up to 20h
Weight (incl. internal battery)	5.7 kg (12.6 lbs)
Dimensions (L x W x H)	300 mm x 249 mm x 196 mm
System operating range	
- Temperature	-10°C ... +50°C (+14°F ... +122°F)
- Atmospheric pressure	700 mbar ... 1100 mbar
- Humidity	0% rH ... 90% rH (non-condensing)
External power consumption	100 – 240 V (400 mA)
Line frequency	50 – 60 Hz

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MULTIPARAMETER FEATURES

Atmospheric air pressure - Type of sensor - Measurement range - Resolution / Initial calibration uncertainty	Piezo-resistive semiconductor 700 mbar ... 1100 mbar 0.1 mbar / ± 3 mbar	Relocation sensor - Type of sensor - Events detected	3-axis, capacitive semiconductor sensor Gentle acceleration (low-freq. only)
Ambient temperature (sensor in ionization chamber) - Type of sensor - Measurement range - Resolution / Initial calibration uncertainty	Band gap semiconductor - 20°C ... + 70°C (- 4°F ... + 158°F) 0.1°C (0.1°F) / $\pm 1.5^\circ\text{C}$ ($\pm 2.5^\circ\text{F}$)	Mains power monitor - Operating principle - Events detected	Monitors ext. 10 ... 32 VDC supply from mains adapter Loss or restart of mains supply, charging
Relative air humidity (sensor in ionization chamber) - Type of sensor - Measurement range - Resolution - Initial calibration uncertainty	Capacitive semiconductor 0% rH ... 99% rH 0.1% rH $\pm 3\%$ rH		