

High-Sensitive Radon Sensor with Wireless Read-out

Industrial-quality sensor for real-time monitoring of radon levels for building automation systems

Keywords

- 10 minutes data update interval for use in auto-ventilation systems
- Mains operated
- Wireless read-out communication based on open standards:
 - Wireless M-Bus 868 MHz according to European Norm EN 13757-4
 - EnOcean 868 MHz according to ISO/IEC 14543-3-10
 - Long-Range 869 MHz based on 6LoWPAN* derivative for large buildings coverage via MergeRF® bridge capabilities
- High sensitivity (30 cph/pCi/l)
- Accuracy and precision within 10% at 10pCi/l
- Patented measurement technology
- Each sensor individually calibrated

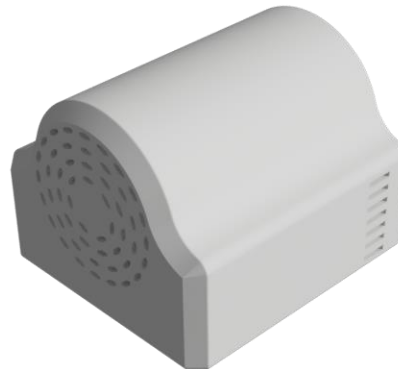
Product Description

Vitirs Radon PRO combines state-of-the-art radon sensor technology with excellent wireless communication range and open wireless communication standards.

The high sensitivity of the sensor element enables as short as 10 minutes or less data update for the measurements. Radon PRO embeds several wireless transceivers on standard wireless protocols for being adopted in building automation systems. The application areas are Indoor Air Quality (IAQ) monitoring with a multitude of connectivity options to auto ventilation control and data logging systems.

Radon PRO is fully compatible with the patented MergeRF® solution with optional direct local connection to ventilation control systems.

Real-time radon value readings are possible with a industrial grade sensor element using a dual probe structured pulsed ionization chamber. Radon PRO is mains operated and will receive and transport sensor data from surrounding IAQ sensors which completes the IAQ insight and connects to the building regulation system



Power connection is through an external AC/DC adapter.

Indoor Air Quality and Building Automation

The patented MergeRF-system is a wireless infrastructure covering any large building without relying- or interfering with Wi-Fi. Automation is embedded in the Central Unit located on-site inside the building, with optional cloud access (Azure, AWS and similar) for data storage, analysis and visualization. Supporting thousands of other sensors and actuators based on open communication standards, the user can digitize existing buildings for a fraction of the cost for alternative solutions. MergeRF supports actuators and thus regulation via the same, common infrastructure.

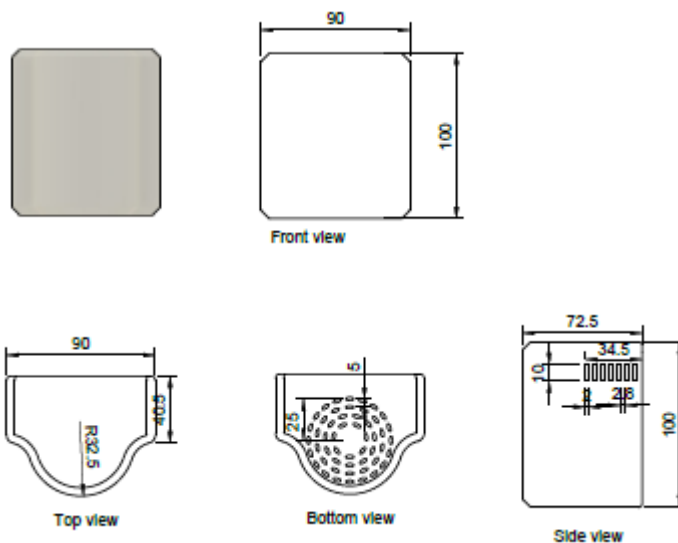
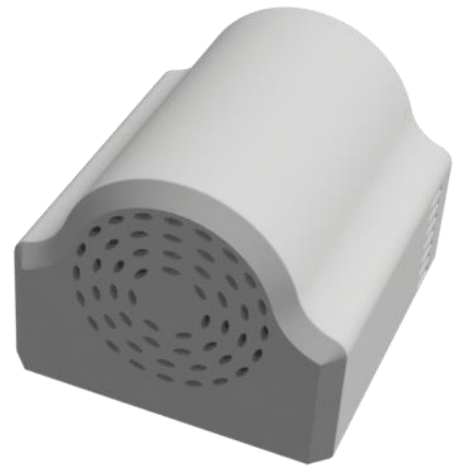
*6LoWPAN requires connectivity to MergeRF network

Typical Applications

- **Air quality monitoring** (radon combined with CO₂, temperature, humidity and other air quality sensor devices)
- **Smart buildings and Energy Management** based on optimized ventilation and energy-consumption only when sensor values are outside boundaries (HVAC control for instance via Modbus valves is available as part of the MergeRF concept)
- **Indoor air climate monitoring with logging and reporting for kindergartens and schools** (Norway: *Act on Radiation Protection and Use of Radiation*)

Electrical Characteristics and Mechanical dimensions

Technical specifications	
Power supply	+5V from external AC/DC adapter
RF frequency	868/869 MHz (Europe)
RF output power	10mW – 500mW
Indicative range between bridges	1000 meters (LOS) 150 meters (in buildings)
Temperature, operational	0°C to +40°C
Enclosure material	ABS, white, flame retardant
Size (W x H x D)	100 x 90 x 72.5 mm
Weight	200g
CE marking	Radio equipment directive 2014/53/EU (RED)



Ordering information and article numbers

Order part number	Description
VT2010-8N-RAD	Radon sensor with MergeRF Bridge
VT2010-MBUS-8N-RAD	Radon sensor with Wireless M-Bus and MergeRF Bridge
VT2010-EnO-8N-RAD	Radon sensor with EnOcean and MergeRF Bridge (Q2/21)
AC/DC 220V/5V power supply	Standard AC/DC with 2.4 mm pin (non-Vitir brand)

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