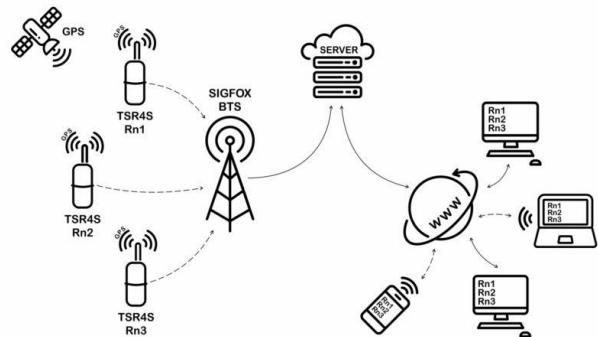


# Radon concentration monitoring



## Wireless Radon Probe TSR 4S

- 24/7 monitoring of radon concentration
- On-line monitoring of measured results on WEB-application (radon concentration, temperature, humidity)
- Alarms over email, (SMS optional) if radon cross the limit though WEB-application
- Internal memory for backup of measured results (downloading over USB)
- Monitoring of GPS position on map



Radon is the second most common cause of lung cancer. You do not know that you are inhaling it. It is not visible or felt, so it is necessary to monitor it. Our radon probes are used to continuously monitor radon concentrations in buildings and properties. They are very sensitive and reliable, yet easy to use. Extensive data connectivity options together with wireless design make our probes a great help not only for measurement companies, but also for schools and kindergartens, households, or offices.

# TSR4S - Product specification

Product	TSR4S - SIGFOX Wireless Radon Probe
Type symbol	042 127 283 000 or 042 127 232 001
Application compability	Nollge - FoverIoT
Average measurement sensitivity	0,25 count/hour/Bq.m-3 (Method RaA+RaC; 15°C ÷ 30°C; rel. hum. 20% ÷ 40%)
Measuring range	MDA – 100 000 Bq/m3 MDA = 100 Bq/m3 per 1 hour or 20 Bq/m3 per 24 hours
Measurement uncertainty	< 13% at 300 Bq/m3 per 1 hour < 3% at 300 Bq/m3 per 24 hours
Measuring chamber capacity	0,176 dm3
Response rate	< 30 minutes (RaA), < 3 hours (RaA + RaC)
Radon records	calculated from RaA (quicker, less sensitive), (recorded only in internal memory). calculated form RaA + RaC (slower, more sensitive), (sended to server and recorded in internal memory).
Measuring relative humidity range	0 – 100 % (WEB and recorded in internal memory)
Measuring temperature	-40 to + 125 °C (WEB and recorded in internal memory)
Results sending and saving interval	15 - 255 minutes, default 1 hour
Results memory capacity	5000 records (208 days of 1-hour records), spectra 300 records
Powering	internal rechargeable accumulator; charging via USB
Accu life after full charging	>1 year (also depends on operating conditions)
Dimension	Ø 80 x 175 mm
Waterproof	IP67 (only for electronics)
Radio technology	SIGFOX RC1 868 MHz

## Operating conditions

Temperature	-10 ° C to +40 ° C
Recommended relative humidity *	10% - 75%
Maximum working relative humidity	0% - 99%
Absolute humidity	5-20 g/m3 * Increased humidity reduces the life of a charged battery * There must be no condensation of water in the chamber - erroneous measuring results
Detector life	50-100 million pulses - average concentration of 1000 Bq/m3 -> 12 years - average concentration of 10,000 Bq/m3 -> 1 year

Probe is designed for continuous measuring of radon concentration. Portable probe basis is a measuring chamber with a semiconductor photodetector. Radon enters the chamber by diffusion through the input filter on the bottom of probe. The probe measures in autonomous and time continuous way. It processes results every 2-minute intervals and from this counts radon concentration (1 hour moving average – average of 30 2-minute process intervals). The probe sends results to server and saves time records in its internal memory (typically at an interval of 1 hour). Next saved value to internal memory is time record of measuring energy spectrum (typically at an interval of 12 hours).

The probe can be switched on/off by switch. LEDs “STAT“and “CHRG“ indicate current status of probe.

