

MicroGuard™

Portable natural gas leak detection solution



The combination of high sensitivity, fast response, digital analyses and geospatial mapping allows MicroGuard™ to detect more leaks faster than ever before.

Measurement made easy.

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01 MicroGuard™ solution components

Overview

Leak surveyors no longer need to use slow, outdated and insensitive equipment to detect gas leaks within distribution pipelines, storage facilities, or anywhere within the natural gas infrastructure. With MicroGuard™, walking surveyors can pinpoint leak locations as well as generate and share comprehensive digital reports within minutes. It can detect, locate, map and quantify natural gas leaks faster and more reliably than traditional equipment.

This unique, portable gas leak detection solution comprises ABB's LGR-ICOS™ ultrasensitive gas analyzer, a ruggedized phablet (large phone/tablet) with GNSS capability and high-brightness screen, ergonomic air sampling wand, and ABB's proprietary MicroGuard™ software. MicroGuard's advanced software provides a rich graphical user interface, a computational platform for geospatial mapping and advanced analytics, and automatically produces investigation reports compatible with all major geographic information systems.

Most importantly, MicroGuard™ can integrate drive survey data (emissions indications), recorded and shared in the cloud by MobileGuard™, to enable walking surveyors to pinpoint sources in minutes.

MicroGuard™ operates from a battery powered, portable, rugged package and employs proven field-tested analytical software to yield the world's first ultrasensitive, cloud-connected solution for pinpointing, mapping and documenting natural gas leaks while walking.

Features and benefits

- Fastest, highest sensitivity gas analyzer
- Records data within 60 seconds after power on
- Integrated sampling wand and UI
- Ruggedized phablet with day-readable screen
- Methane and ethane measurements provide source attribution
- Data reported at 10 Hz with high sensitivity
- No cross interferences
- Fast gas flow response (2.5 Hz, 1/e)
- Multiple data outputs
- Secure internet connectivity
- Reads digital maps generated by MobileGuard™
- User interface (Android) maps real-time data
- Automatically generates digital reports for import into user's GIS
- Lightweight analyzer: less than 6.1 kg (13.4 pounds) with battery (included)

- 01 Leak surveyor using MicroGuard™
- 02 MicroGuard™ app graphical user interface

A comprehensive solution

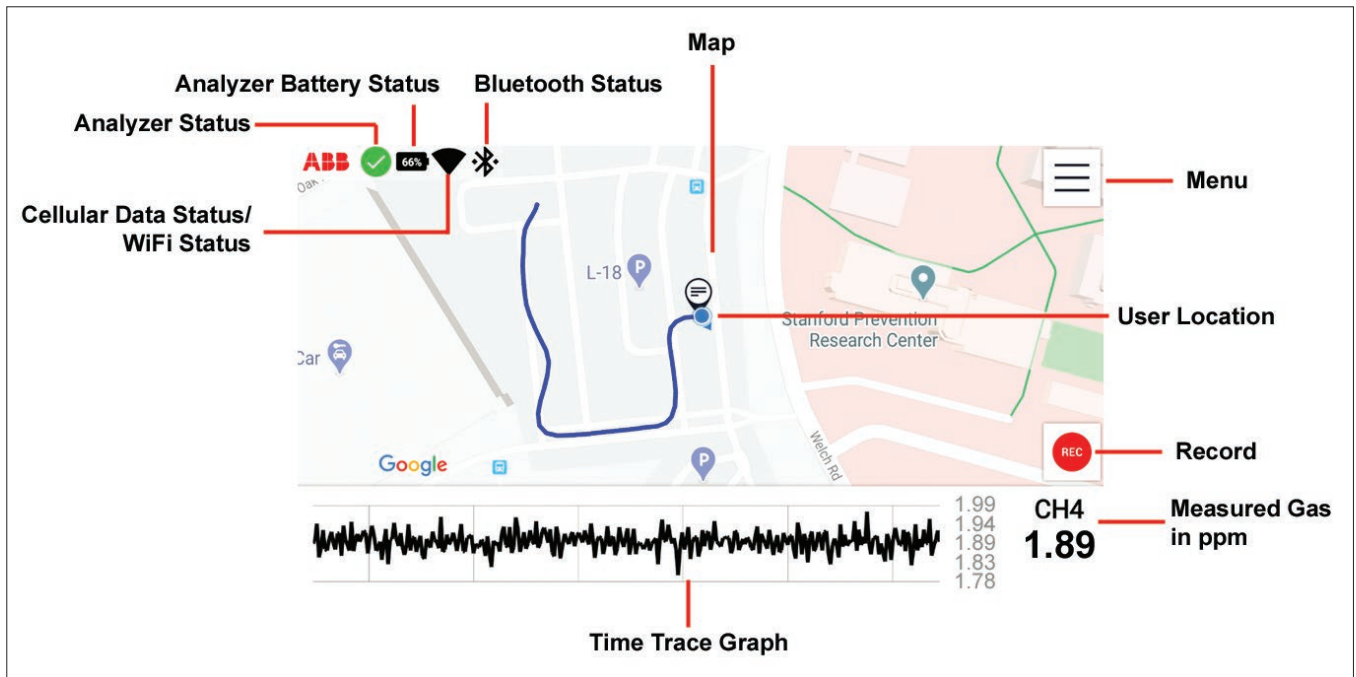
MicroGuard™, based on ABB's successful microportable product line of gas analyzers, was designed to operate autonomously as a standalone unit or seamlessly with MobileGuard™, the vehicle-based solution employed by utilities worldwide for detecting leaks while driving, to precisely pinpoint leak locations in minutes while walking.

This high-performance analyzer records data within 60 seconds after power on so users can begin recording accurate measurements on demand. MicroGuard™ can store data almost indefinitely and send real-time data to a large ruggedized phone (included). For simple and intuitive operation, it employs proprietary control and analysis software that operates on an Android device.

The MicroGuard™ (Android) app provides a rich, graphical user interface that enables surveyors to view measured gas concentrations on a dynamic geospatial (Google, AutoNavi) map continuously in real time. Moreover, it can load and inspect emission indications shared by ABB's MobileGuard™ system to dramatically reduce the time to detect and find leaks. Users can also add comments, photos and videos of investigation sites, and automatically create and share digital reports that are compatible with all major GIS software.

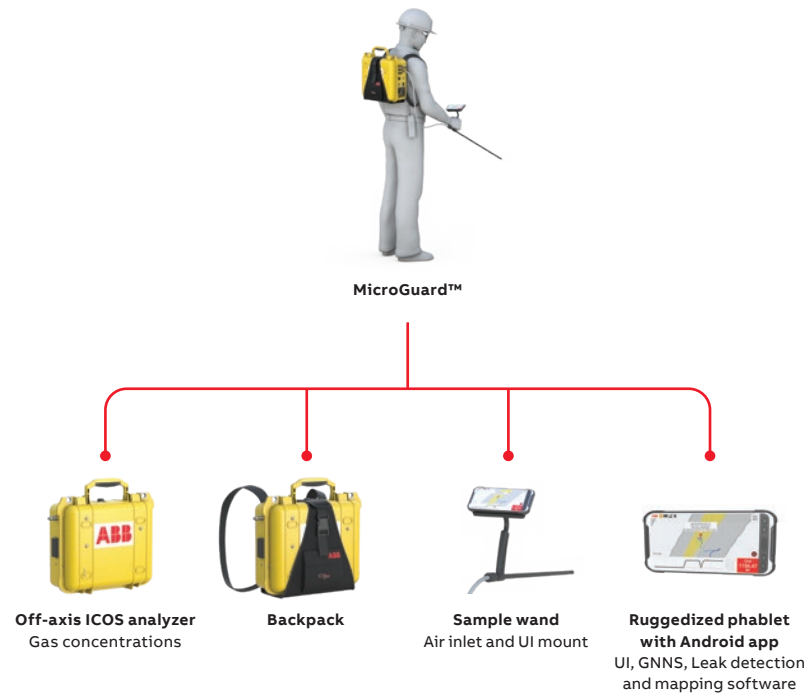


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MicroGuard™ operates while walking to pinpoint leak emission sources



MicroGuard™ technical specifications

Specification	Value	Notes
Precision, methane	1 ppb or 0.05% of reading	1 σ RMS in 1 sec
Air flow response rate (1/e)	2.5 Hz	Characteristic flow response rate
Data rate	10 Hz	1 data point every 0.1 seconds
Dynamic range, methane (GLA131-MEA)	0.01-10,000 ppm	High sensitivity and wide range
Internal battery life	4 hours	Battery swap time < 3 minutes
Weight	6 kg	With 4-hr battery
Dimensions	12 cm x 34 cm x 29.5 cm	
Area classification	General purpose	
Operating temperature	-5 to 50 °C	
Integrates data shared by MobileGuard™		
GPS/GNNS position accuracy	< 1 m	
Data display	Digital, map, satellite imagery	Rich user interface provides real-time data and geolocation
Digital report generation		Comprehensive report generated after each investigation
Cyber secure		Independently tested and validated
Internet connectivity	3G/4G/LTE	

ABB Inc.
Measurement & Analytics
3400, rue Pierre-Ardouin, Québec, Québec
G1P 0B2 Canada

1 800 858-3847 (North America)
Tel.: +1 418-877-2944 (other countries)
Fax: +1 418-877-2834
Email: icos@ca.abb.com

abb.com/measurement

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