GUTERMANN

ZONESCAN AI

Correlating NB-IoT Leak Noise Logger

with Artificial Intelligence



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Ease of use and lower OPEX



Packed with features to optimise installation & maintenance

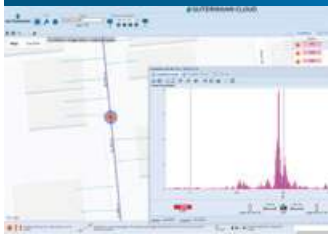
Installing a leak noise logger has never been easier. The Android app ZONESCAN INSTALL will guide you through the process of activating the ZONESCAN AI logger, registering it to the NB-IoT network, assigning its exact location and programming the noise recording times.

Loggers are typically deployed every 50 to 300 meters, depending on the area and the pipe properties. With a single unit and the smallest dimensions in the industry, the ZONESCAN AI logger fits into any size chamber.

The maintenance of loggers is optimised thanks to:

- Field replaceable battery
- Inbuilt 3D motion sensor to detect logger displacements
- Fuel gauge chip for improved battery lifetime prediction
- Humidity and temperature sensors to monitor logger health

Unprecedented Accuracy and Confidence



High precision leak pinpointing thanks to automatic correlation and Artificial Intelligence

The recorded sound signal of every logger is time synchronised via Gutermann's proprietary technology with best-in-class precision of ≤1 millisecond. Thus, it enables the cloud software to automatically correlate the data between all neighbouring sensors and to provide leak indications even where the individual loggers don't recognise the existence of a nearby leak. The correlation enables pinpointing of leaks with a typical precision of ≤1m.

ZONESCAN AI now adds additional leak intelligence by providing artificial intelligence. ZONESCAN NET will provide an "AI Predictor" for every measurement, based on comparing the recorded sound file with a vast database of qualified samples that Gutermann has collected over the years. This AI Predictor further helps minimising ambiguity and allows customers to find more hidden leaks than ever.

Reliable Communication



NB-IoT data transmission from below the chamber lid directly to the cloud

ZONESCAN AI is using NB-IoT (Narrowband Internet of Things) technology, supported by most GSM operators. It is best suited for battery powered devices installed in underground chambers. The use of the latest radio chip, high performing antennas and close software collaboration with the GSM providers are optimising the communication to the Gutermann cloud.

ZONESCAN AI using NB-IoT -significantly outperforms other IoT 3G/4G CAT M1 devices due to:

- Avg. 5+ year battery life
- Deep underground coverage
- Firmware and configuration upgrades over NB-IoT network
- Lower communications costs
- User or factory mounted SIM card with multi network roaming option
- Outstanding typical daily read rates of ≥95%

Secure Global Cloud



ZONESCAN.net Industry-leading cloud software for leak analysis

GUTERMANN CLOUD has a Google Maps™ and Street View™ based user interface which allows you to manage your entire leak detection infrastructure, import your own GIS pipe data and to analyse and process leak alarms. Parameters such as recording times, alarm thresholds and many more can be changed anytime.

An event management tool facilitates:

- Efficient work flow and the classification of your leak alarms
- Track active and repaired leaks
- Generation and distribution of detailed leak reports

The new Cloud AI (to be released in 2024) is using thousands of factual training data validated by worldwide real users. Thus, increases leak prediction reliability to a completely new level. ZONESCAN AI provides the required hardware for artificial intelligence, using a state-of-the-art CPU with additional cyber security.

Technical Specifications

Enclosure/housing material:	100% stainless steel
Ingress protection:	IP68
Dimensions:	Length 107mm/4.2", Ø 40mm/1.6"
Weight:	0.54 kg (1.2 lbs)
Temperature range:	-30°to +70°C (-22° to +158°F) *refer to reference temperature profile
Communication:	Cellular (NB-IoT), various bands
SIM Card:	Nano, exchangeable
Battery:	Replaceable Li-SOCl2 cell size C
Battery life:	Typically, 5 years, depending on configuration, NB-IoT coverage and temperature profile
Antenna:	High performance mono band extended antenna with magnetic base and RSMA connector. In shallow chambers, a flexible stub antenna can be directly mounted on the logger.

Cloud Software Features

- ✓ Browser-based cloud software with data hosted on secure servers of GUTERMANN's professional hosting partners
- ✓ PEN tested, ISO 27001 certification pending
- ✓ Automatic daily leak correlation
- ✓ Calculation of leak probability using cloud AI
- ✓ Advanced spectrum analysis to avoid false leak alarms even in noisy environments
- ✓ Display of all historical sound histograms, frequency spectrums and correlation data
- ✓ Geospatial mapping of loggers and leaks (using Google Maps™ and Street View™ technology)
- ✓ Ability to import GIS and piping data in KML format
- ✓ Maintenance mode for real-time check-up of each logger
- ✓ Event ticket management with work-flow support
- ✓ Remote access possible from anywhere in the world
- ✓ On demand assist by GUTERMANN specialists to support difficult leak investigations
- ✓ Automatic upgrades of cloud software, Android app and firmware

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