

# AQUAMETER

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Accessible, cost-effective, deeptech water telemetry solution

Discover...

- The environmental & societal challenges associated with water management
- An innovative solution based on AI & IoT technologies
- A disruptive approach designed to be accessible, evolutive & economical



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# Water Management – A Crucial Environmental & Economic Challenge

Managing our water resources is now more than ever a critical challenge for municipalities and utilities. Today, the majority of communities still rely on manual or semi-automated approaches such as walk-by or drive-by meter reading. These methods allow only a few readings per year, thus letting leaks go undetected for months and leading to significant water loss and substantial costs for both consumers and utilities.

## MODERNIZE WITHOUT REPLACING EVERYTHING

In the current context, the need to transition to wireless Advance Metering Infrastructure (AMI) is undeniable and inevitable. However, this shift raises several challenges for water companies including:

- **The high cost of completely replacing installed meters**
- **Complex installation procedures that often require service interruptions**
- **The integration of meter data into billing platforms**

**Aquameter responds to all of these challenges.**

## AQUAMETER ADVANTAGES

- **Eco-friendly** – Upgrades existing meters, replaceable battery, recyclable
- **Detects leaks** – Daily readings analyzed by artificial intelligence
- **Cost-effective** – Adds on to existing meters, cost effective telemetry
- **Universal** – Compatible with all models of meters
- **Installs easily** – No interruption of water supply
- **Autonomous** – 9,000 cycles or more than 20 years at one reading per day
- **Connected** – Telemetry by LoRaWAN, LTE-M, NB-IOT, configuration by NFC
- **Upgradable** – Remote firmware updates
- **Guaranteed confidentiality** – Secure data management and transmission



# An Innovative & Universal Solution

Aquameter is a generic sensor that can be added to any mechanical water meter. It contains electronics that, at a configurable frequency, photograph the meter's display, recognize the digits in the photo, and transmit that data via a low-power long-range wireless network (LPWAN).

It also includes an NFC interface that allows a nearby mobile phone to configure it, read its status, and take manual readings — all without consuming any energy. It is watertight and dust proof. After installation and setup, it is fixed in place with an anti-tamper seal.

Its lithium battery and low-power technology ensure a service life of more than 20 years (9,000 cycles) before its battery needs to be changed.

Modification of Aquameter's adapter ring and OCR parameters make it compatible with all brands and models of meters.



LoRaWAN®

LTE-M NB-IOT



## Applications

Aquameter is designed for the remote reading of mechanical water and gas meters. It can also be applied to other types of mechanical gauges or machinery — particularly in cases where the equipment is isolated and an electrical power supply is not readily available.



## Technologies

Aquameter implements the following components and technologies:

- **A camera** that photographs the meter's dial. Two LEDs provide lighting to take a photo of the digits on the meter's display. The photos are combined into a single image for analysis and data extraction.
- **A processor running an Optical Character Recognition (OCR) algorithm** reads the meter's index. This algorithm is optimized for very low power consumption and has a decoding reliability of 100%.
- **An LPWAN communication interface** that can be configured to use protocols such as LoRa, LTE-M, NB-IOT, SigFox, and Wireless M-Bus.
- **An NFC interface** for interacting with mobile phones during installation set up and configuration. It can also be used to manually retrieve the meter's data or the last image that was taken of the meter's index.
- **An optimized management of the cycle of tasks** minimizes the consumption of energy, ensuring optimal life span of the battery.



## Deployments & Outlook

Currently in the pre-production phase, Aquameter is attracting strong interest from actors in both the public and private sectors, particularly in Europe, Africa and Latin America. Several hundred units are being tested by water utilities in four countries, which together represent a potential market of 10 million devices. Aquameter's simplicity, reliability, and cost effectiveness make it an ideal solution for kickstarting the digital transformation of water networks.

### For more information...

IoTize offers utilities and local authorities a complete package for conducting field trials with Aquameter. To learn more or request a price quotation, contact us today at:

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