Solutions for water networks digitalisation

Pietro Fiorentini

Let's protect water to **safeguard the planet**

Water is a **primary resource**. Managing the water sector correctly is an institutional, economic responsibility, and for the planet.

That is why our objective is to contribute efficiently to the network, **optimising management and avoiding waste**. We do so through **hardware and software solutions** that can control the water network process in any stage and by studying customised solutions.

Accordingly, automation, digitisation and data management provide **important business results** for companies. And, above all, a **social benefit for the community**.

Pietro Fiorentini

Founded in Bologna in 1940, Pietro Fiorentini is one of the largest industrial companies in North East Italy. With over **80 years of experience** along the entire **natural gas** chain, the Group has now extended its horizons towards developing technologies and solutions for a **digital**, **sustainable** world, with special attention for projects linked to **water** and **renewable energies**.

Over **2,600 collaborators** worldwide

20 production plants

Offices in Europe, Africa, America, Asia

Services to over **100** countries

The strength of the **Group**

Consisting of a variety of companies and brands active in different sectors, the **Pietro Fiorentini Group** boasts a **global** presence and a wide selection of products and services, available both **on-site** and **remotely**. Combining our partners' experiences makes the Pietro Fiorentini Group the partner of choice for efficient and innovative water resource management.

FAST TERRANOVA arcoda

Software for the water network world

We develop software ecosystems specifically designed to optimise the management and remote control of water networks using IoT and data analysis systems.

OVERLAND KARMA

Overland is the web portal capable of **monitoring** the multiple installations of a water network. The system collects data acquired from remote data loggers distributed across the territory, saves them to a database located in the management centre and processes them by **displaying them in web mode**.

Functions:

- Integration with corporate GIS system
- Management of all systems in the distribution network by division into areas
- For small systems, monitoring of data such as pressure, flow, level, water quality analysis, cathodic protection. For medium and large systems, acquisition and controls for pumps, valves, tanks, diaphragms, etc.
- System synoptics
- Display of data collected from RTUs via daily and hourly trends. Indication of alarms and abnormal situations to appropriate personnel by e-mail / SMS
- Maintenance management and interface with corporate ERP
- Possibility of making comparisons between the different periods on the same or on different districts
- Interaction with intervention teams

AQUASOFT AQUAWORKS

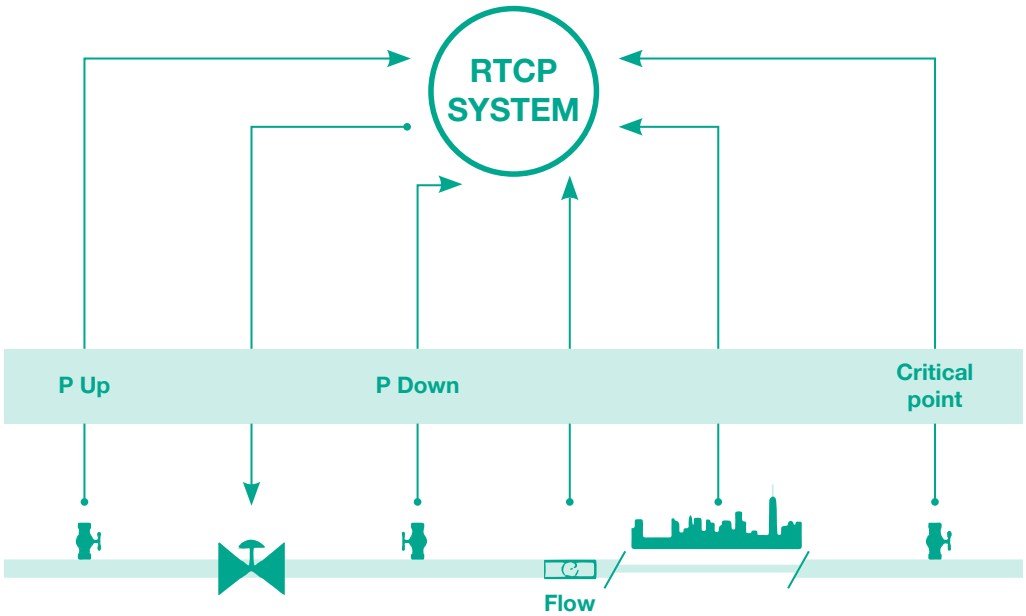
Aquaworks is an application software that **helps the manager** instantly grasp the important elements of network operations starting from the creation of districts and up to in-depth analysis of leaks.

Functions:

- Multi-track graphics that highlight the trend of flows and pressure with specific reference to nighttime behaviour
- Macro leakage pre-localisation indicators
- Dynamic alarms calculated on the drifts and tolerances of the graph tracks
- Alarm signals if levels are overrun
- Reporting and graphic presentation of pressure transients (“water hammers”)
- Economic assessment of whether repairs are worthwhile
- Identification of the “Golden Week”
- Possibility of making comparisons between the different periods on the same or on different districts
- Interaction with intervention teams

RTCP ML

RTCP ML is software that **regulates the critical point** using **artificial intelligence**. Thanks to an elaborate machine learning model, the algorithm processes data collected and learns. The prediction model is then transferred to the peripheral regulator which applies the model by creating the virtual critical point. The regulating action minimises leakage, breakage frequency, increases water savings and makes infrastructures last longer reducing energy costs.



Water cycle under control

Pietro Fiorentini's remote control devices provide real-time information, ensuring timely decisions and optimal water resource management.

Aqualog AW

Latest generation RTU integrated in Cloud architecture is the innovative response for the monitoring and control of water distribution systems. This is a PRV and pump controller to regulate pressure in the districts, able to manage reduced leakage in the best way possible, with extended capacity to monitor connected sensors (pressure, temperature, level and quality).

PQ Evo

RTU performing any assignment to manage and control the water network: **supervision** and **control of pressure**, **flow rate** and **levels**. The device is battery-powered and designed to operate at **very low energy consumption levels**, making it especially suited to environments where operations are difficult and there is no electricity.

Diana

Battery-powered **RTU** for **permanent monitoring of water hammering**, **pressure** and **flow rate**. This device acquires and permanently records pressure transients. It is **equipped with geolocation** and synchronisation with **integrated GPS**.

Discovery Mode: "water hammer" phenomena recorded as frames and high frequency audits of up to 48 hours.

Master

Advanced RTU for the control and management of water networks. Especially suited for managing **critical systems** such as pumping stations, water treatment, regulation of flow, pressure and levels. Its advanced functions enable smart water network management, implementing solutions that reduce consumption and operating costs.

De Visu

Device enabling simple, intuitive **process management**. The plant situation can be **monitored and controlled** through the graphic interface and touchscreen display, modifying operating parameters and sending commands to the process.

Power Spin

Pressure regulator for PRV; applied to hydraulic valves it regulates the downstream pressure, for a uniform action with no discontinuity. The work set point, calculated automatically based on the operating flow rate, is reached quickly and precisely thanks to **artificial intelligence algorithms**.

Level X

Ultrasonic IOT sensor to measure open canals and rainwater spillways. **Level-X** combines with all the Aqualog line data loggers and integrates perfectly with the **Overland** and **Aquaworks** web platforms. It is an innovative response for permanent in-the-field diagnostics, able to communicate in real time with the company SCADA centres and IoT technologies.

Meters for all measurement needs

::

To facilitate digitisation, energy transition and greater management awareness: these are the objectives of Pietro Fiorentini in the world of water measurement

Static **ultrasonic** meters

The new **SSM-AQUO** are **ultrasonic water meters** designed for the residential sector. They use a static measurement technology, that does not feature moving parts subject to wear, and guarantee high precision even managing to measure very low flow rates and any plant leakage, together with other anomalies such as a broken pipe, no consumption or an inverted flow.

Main features

- **Wireless M-Bus** integrated radio transmission (walk-by, drive-by reading mode), **Lorawan** (fixed network Lpwan) and **NB-IoT**
- APP to configure and manage the meter
- Alarm detection: leakages, explosion, empty pipe, inverted flow, residual battery capacity below alarm level
- Battery lifetime **over 13 years**

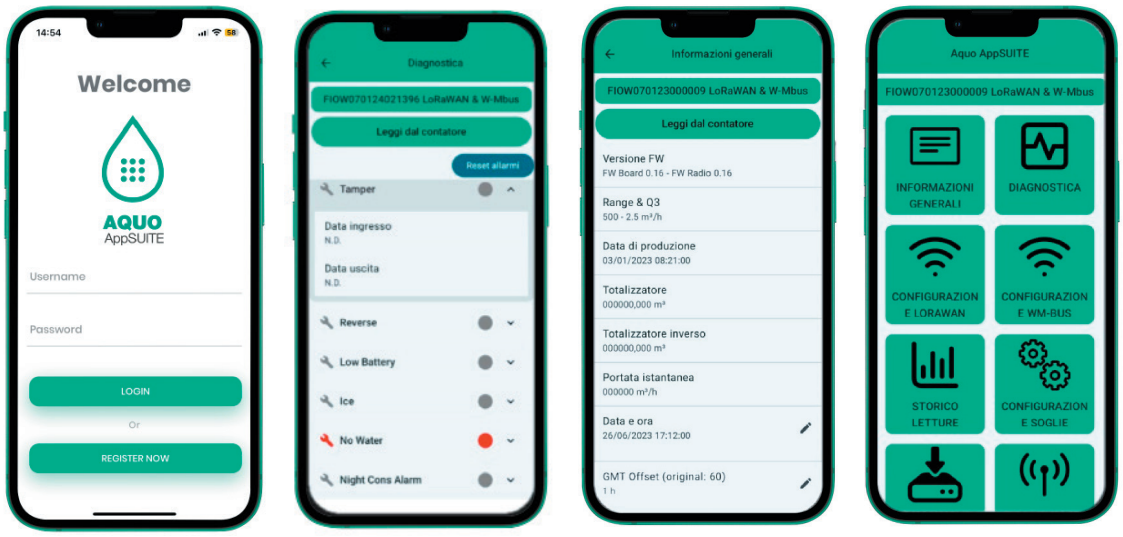
AQUO AppSUITE

AQUO AppSUITE is a powerful and easy-to-use software tool developed by Pietro Fiorentini S.p.A. dedicated to the **commissioning**, **configuration** and **diagnostics** of smart devices or meters directly in the field.

It is the **ideal solution** for managing smart meters with the possibility of:

- Changing Wireless M-Bus and LoRaWAN and Nb-IoT parameters, including enabling the radio module;
- Setting alarm detection (thresholds, duration);
- Readout of events for detailed on-site inspections and access to Data logger information for more in-depth analysis;
- Firmware update.

Available for **Android**.



Pietro Fiorentini

www.fiorentini.com

The data are not binding. We reserve the right to make changes without prior notice.

www.fiorentini.com