



waboost

Smart Water

Waboost SmartWater is an IoT remote control unit for the Waboost Gea, Flora and Fauna line of water aeration systems, operated from your mobile phone or tablet.



The SmartWater unit provides full Wi-Fi or mobile network real-time remote control and management of a Wacognis system. The unit comes in the form of an IoT module that is plugged into the "IoT ready" port of the Wacognis water aeration unit. Different sensors can then be connected to the unit.



The Android or iOS mobile application enables real-time remote supervision of the sensor data and control of operation, while the SmartWater web application provides advanced system data analytics and visualisation.

Available sensors:

- DO - Dissolved oxygen sensor
- ORP - Oxidation-reduction potential sensor
- Water pressure sensor
- Unit internal temperature and humidity
- Surrounding air ozone concentration
- Electrical current sensor (power, provided to the unit)
- Temperature (ozone generator, compressor, unit internal ambience temperature, water temperature)
- External reservoir floating switch connector



Benefits

- Real-time alerts and notifications
- Remote control and system regulation
- Remote parameter monitoring
- Remote performance monitoring
- Time & cost savings - no need to attend the system in person
- Real-time sensor data analysis and visualisation
- Automatic self-regulation of the system
- Automatic critical shut down
- Cycle trigger timing
- Remote OTA unit firmware update



Features

- Wi-Fi or cellular network connectivity
- Remote system management
- Remote parameter monitoring
- Android, iOS, and web applications (advanced visualisation)
- Connect different sensors
- Control unit subsystems:
 - Water pump
 - Ozone generator
 - Oxygen generator
 - Optional additional gas generator, or pump





Waboost Smart Water digital solution was designed and developed as an ad-on or upgrade to Waboost nanobubble hyper-aerating systems to improve the current state-of-the-art with digitizing the control system of Waboost nanobubble technology using the advanced technologies of IoT, cloud technologies and data analytics connected with the already integrated sensor systems in Waboost Nanobubble technology.

Solution was finished and tested as a part of [DIH World SmartNano4Food](#) project experiment and Waboost team developed the regulation of its UFB devices based on water dissolved Oxygen.

During the Experiment we proved that newly developed IoT based Smart water system solution improved:

- adjust levels of Oxygen nanobubbles and improve machine operation to produce best results for the target customers in the agriculture and food process sector and make the water UFB hyper-aeration system process more efficient.
- reduce the working hours of machine operation (Oxygenation of irrigation water, animal farming or other diverse UFB applications) with completely autonomously based operation on pre-set user preferences. The optimization of machine operation will directly influence on customers lower energy consumption, customers manpower cost reduction, customers maintenance cost reduction and consequently resulting to customers sustainable production.
- The data collected in the cloud could enable future analysis and paired with AI also importantly improving the efficiency of the plant/animal agricultural production and production prediction.

Laboratory and field tests were conducted as a part of SmartNano4Food project:

- ✓ After laboratory testing of the Smart water system, we started to perform field tests on a **pig farm in Italy** at a **tomato greenhouse in Slovenia** and at **crop irrigation reservoir in Slovenia**.
- ✓ Field tests monitored and verified all developed functions of the remote Smart water system, including control and management of UFB devices, monitoring, recording of operating parameters and UFB system regulation.
- ✓ The first and the second field locations were intended for the control and management of UFB devices, monitoring and recording of operating parameters, while the third one was intended to test all the Smart water systems including UFB system regulation.

Waboost Smart Water digital solution helps to adjust levels of nanobubbles and improve machine operation to produce best results for the target clients in food process sector and make the water hyper-aeration system process more efficient. The end-users no longer have to experiment how long they should run the machine since it is able to operate completely autonomously based on user preferences. The data collected in the cloud enables future analysis, improving the efficiency of the irrigation system on diverse applications.

