

FLUVES

IOT WATER QUALITY SENSOR

Our IoT water quality sensor is a fully **autonomous, solar-powered** unit that measures electrical conductivity and temperature. The electrical conductivity measurements reveal the purity and the salinity of the water.

The sensor, made by [Sodaq](#), uses a pair of specially designed **interacting probes to measure water conductivity and temperature**. The probes' characteristics are calibrated over the whole measurement range, and this calibration is offset to match each individual probe. Each measurement is automatically adjusted for temperature. This EC data and

temperature data is sent over an IoT network to a dashboard, allowing remote detection of changes to the water at an early stage.

Continuous monitoring of EC data in combination with sample lab analyses provides **accurate understanding of the interaction between any water and its surroundings**. The sensor is a trusted solution already used by water authorities, local governments and in the agricultural sector.

AUTONOMOUS & ROBUST

The sensor is designed to **work autonomously**, as many water sources are difficult to reach, and expensive to test regularly. The battery is recharged autonomously by a **combination of rechargeable batteries with a solar panel**.

The **sensor** is rated to IP 67, and **continuously monitors** its location, electric circuits, and battery health. **Anomalies are reported** through alarms allowing for proactive maintenance or replacement planning. The water quality sensor has already racked up many years of measurements in water tanks, ditches, rivers, estuaries.



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FEATURES

- ~ LTE-M / NB-IoT connectivity
- ~ Real-time accurate water conductivity and temperature measurement
- ~ Pre-calibrated at production and self-calibration to reduce long-term accuracy drift
- ~ Solar powered and charged with nighttime battery
- ~ Location information via GPS
- ~ Automatic temperature compensation
- ~ Direct serial connectivity for verbose data output and device calibration
- ~ Data insights on dashboard (optional)



DATA

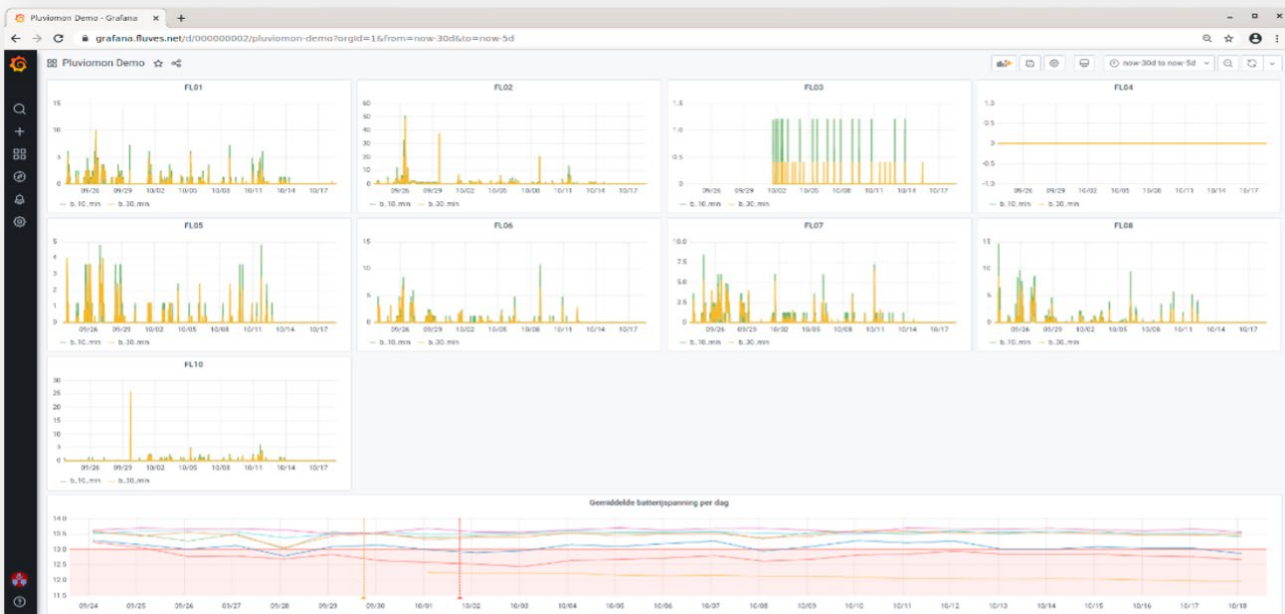
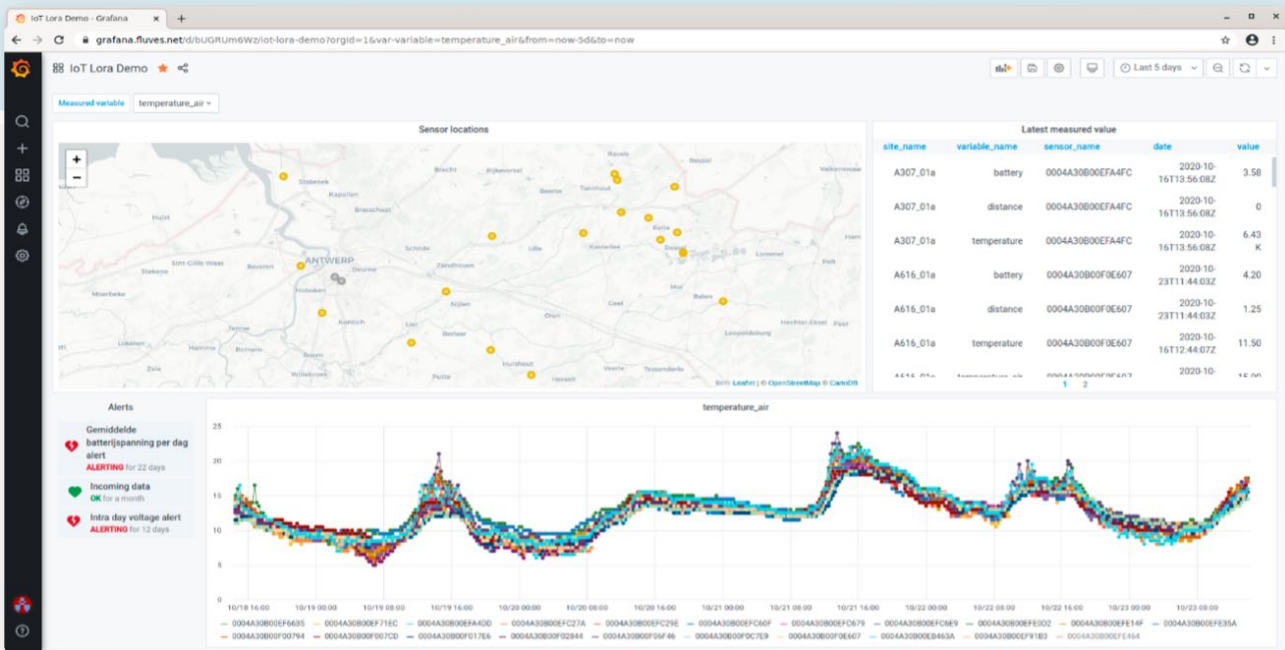
Sensor data holds sensor information, network ID information, geographical location information as well as an identifier of the device owner. By default the SODAQA WATER sends all data to secure servers. The data is presented and can be downloaded through a private or public dashboard showing the water information and the location by default. FLUVES also offers a data forwarding service that sends the raw sensor data to your own or a third party dashboard of choice.

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DASHBOARD

Fluves develops **dashboards for visualization, alarming and reporting of your data**. Sensor data is wirelessly sent to (cloud) databases. Data is stored and visualized in our dashboard that can be customized to our clients' needs.

We also **integrate with other client-specific platforms**. Automatic warnings, such as email or SMS can be sent when a given threshold is passed.



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TECHNICAL DETAILS

Our EC measuring stations have the following characteristics:

- ~ Measurement range 0 - 21700 $\mu\text{S}/\text{cm}$
- ~ max. error 0-200 $\mu\text{S}/\text{cm}$ <4%
- ~ max. error 200-3,000 $\mu\text{S}/\text{cm}$ <1%
- ~ max. error 3,000-21,700 $\mu\text{S}/\text{cm}$ <7%
- ~ Temperature range 5 - 50°C
- ~ Temperature accuracy 0.5°C
- ~ Operating voltage 5 V
- ~ Ultra low power consumption 225mW (45 mA)
- ~ Easy to calibrate Calibration liquid for EC meters – conductivity solution 1413 $\mu\text{S}/\text{cm}$
- ~ Datacommunication NB-IoT or LTE-M.
- ~ GPS-location included in datastream
- ~ Configure through serial communication
- ~ Cabel length 4 - 10 meters

