

# Aquatos Web LTX

 <p><b>Three measurands</b> Water level, electrical conductivity, temperature — on one SDI-12 bus.</p>	 <p><b>Secure networking</b> TLS transmission, signed firmware, PIN-protected Bluetooth access.</p>	 <p><b>Up to 10 years autonomous</b> 2x LSH20 parallel, &gt;3 M measurements, &gt;30,000 transmissions.</p>	 <p><b>LTE-M + Bluetooth 5</b> Real-time transmission, browser-based commissioning.</p>
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## DESCRIPTION

The **Water Level & Conductivity application package** combines the flagship data logger **Aquatos Web LTX** with the high-precision piezo pressure sensor **Type 0312** and the four-electrode conductivity sensor **Type ES** to form a self-sufficient monitoring station for groundwater, surface water and critical infrastructure.

Both sensors run on the logger's single **SDI-12 V1.3 bus** — one sensor cable, no additional signal converters. The logger captures **water level, water temperature, electrical conductivity and fluid temperature** synchronously and transmits the data via **LTE-M (with NB-IoT fallback)** to the Sensormanager web portal.

End-to-end encryption using **TLS-CBC** (recommended by the German Federal Office for Information Security) and signed firmware make the package suitable for regulated monitoring networks and critical infrastructure. On-site configuration is done via **Bluetooth 5** — no app, no cable, no SD card.

## APPLICATIONS

- Groundwater monitoring with salinity control (coastal regions, bank filtrate)
- Surface water — conductivity profiles in rivers, streams and lakes
- Drinking water protection and early warning of pollutant ingress
- Agriculture and irrigation — salinity of irrigation water
- Landfill and legacy-site monitoring, leachate measurement
- Research monitoring networks with high temporal resolution




## KEY FEATURES


- **Three measurands** — level, EC, temperature
- **SDI-12 bus:** both sensors on a single input
- **Up to 120 dS/m EC** · four-electrode principle
- **±0.1 % FS** long-term stability of the piezo
- **LTE-M + NB-IoT fallback · TLS-CBC**
- **Up to 10 years** battery life
- **IP68** · operation from -25 °C to +85 °C
- Local configuration via **Bluetooth 5**


# Technical data

Aquatos Web LTX · Piezo 0312 · Type ES

PARAMETER	VALUE
Measured parameters	<b>Water level, water temperature, electrical conductivity, fluid temperature</b>
Remote data transmission	<b>LTE-M with NB-IoT fallback (bidirectional) · Bluetooth 5 (BLE) locally</b>
Input channels	<b>24 digital channels · SDI-12 V1.3 · max. 24 SDI-12 channels</b>
Data transmission	<b>TLS-encrypted (Logger ↔ Sensor manager server)</b>
Bluetooth access	<b>PIN-protected · lock-out after invalid attempts</b>
Firmware	<b>Encrypted · signed updates · over-the-air (OTA)</b>
Power supply	<b>Lithium battery · up to 10 years operation (&gt;3 million readings)</b>
Operating temperature	<b>-25 °C to +85 °C · no icing</b>
Ingress protection	<b>IP68 (24 h at 1 m submersion depth)</b>
Software	<b>Sensormanager web portal · Bluetooth-App app (Web Bluetooth, Chrome / Edge)</b>
Conformity	<b>CE (RED 2014/53/EU, EMC 2014/30/EU) · RoHS</b>

 **TLS-encrypted**  
Data transmission logger ↔  
Sensor manager server

 **Signed firmware**  
Encrypted · signed updates only · OTA

 **Bluetooth PIN protection**  
PIN-protected access · lock-out after  
invalid attempts

 **CE · RED · RoHS**  
Radio Equipment 2014/53/EU · EMC  
2014/30/EU

 **IP68 · field-ready**  
-25 °C to +85 °C · permanent field  
operation

 **Made in Germany**  
Engineered & built in Bochum,  
Germany