



### AQUA CONNECT'

## Aqua Connect' : Autonomous wireless real-time communication solution for Digisens Ponsel digital sensors

- Local and independent radio communication network
- Transfer and hosting of the secure data
- No IT management, only Internet browser for operation
- Real time visualization
- 2 years autonomy (depends on sensor)
- SMS and email alerts

### Application areas :

- Aquaculture
- Sewage treatment plant (follow-up purification performances, input, rejects ...)
- Self-monitoring
- Natural waters
- Drinking water (pumping station, tank management ...)
- Waste water (lift station, sanitation network ...)

### Aqua Connect' Solution :

Our solution **Aqua Connect'** allows to follow **in real time**, the measures made by the digital sensors Digisens of the brand Ponsel on the parameters Temperature, Oxygen, pH, conductivity, Salinity, Redox, Turbidity, SS, Sludge Blanket.

Every sensor is connected on a **wireless autonomous** module "**AquaMod'**" which records the data stemming from the digital sensor. The measures are transmitted in a Gateway "**AquaGat'**", via an **independent local area network** LoRaWan. The collected data are then pushed towards a **secured** server Cloud allowing the display of the measures as well as the transfer in format csv.

Accessible local Web application via WIFI since any browser (Chrome, Firefox, etc..) for the calibration of the sensors. For the configuration of the frequency of the acquisition, regulations of the alerts, the display, etc application smartphone, computer, tablet.

The monitoring of your real time data was never so simple!



### **LoRa® Technology :**

Our module AquaMod "communicates via a local area network and private **LoRa®**. This network wireless allows a communication with low consumptions, a long range, optimized for equipment working on batteries (many years' autonomy). This network is perfectly adapted to the applications of energy control.

With a private network, you are an owner of your gateway and your network LoRa®. Thanks to this solution, you manage directly the collection of data coming from your digital sensors, to manage them towards your platform. You do not pay costs of communication by maintaining your LORA® network.

### **Module AquaMod':**



AquaMod ' is a tight, autonomous wireless module allowing to collect the data measured by the digital sensors physico-chemical DIGISENS of the brand Ponsel.

Simple to install and preconfigured in factory, the AquaMod' module is immediately operational.

Configuration and diagnostic in local via WiFi and Web application.

#### Gateway AquaGat':

AquaGat' is a concentrator of data which receives the information sent by AquaMod' wireless telegraphy on the network LORA®. AquaGat' transmits on then these data on the Internet (Ethernet, WiFi), towards the server AquaCloud'.

The Gateway AquaGat', can welcome up to 100 modules (that is 100 sensors, 1 sensor by module)..

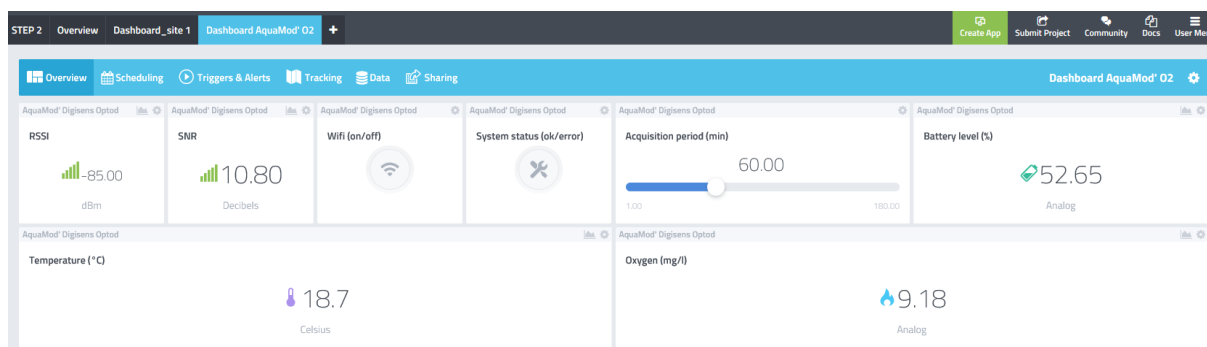


#### AquaCloud': data mining.

Real interface of management for the surveillance of the quality of waters, your Web platform AquaCloud' concentrates and records the data collected by your on-site sensors.

The Web platform allows you of:

- Oversee and configure your installations,
- Visualize your data under format board or graph,
- To create customizable dashboards including daily, weekly balance.
- To protect and export your data in the format csv.
- To set up alerts by email and/or via SMS.



#### Key points:

- **Real time** surveillance and data transmission of your digital sensors (alarm in case of exceeded threshold, battery weak, defect sensor ...),
- **Private** Communication network **LoRaWan** and frees operators,
- Modulate AquaMod' **autonomous** (2 years of autonomy at least),
- **Intuitive** user interface PC, Smartphone, tablet ...,
- Customization of the display Cloud by the user (display of curves, transfer of the data in format csv, creation of dashboards "Dashboard"),
- **Reassurance by connection http** (accommodation on Cloud Aqualabo, surveillance 24h/7d, access reassured via identifier and password ...),

#### *AquaMod' Module specifications:*

<b>Autonomy</b>	2 years minimum, to more than 5 years according to application
<b>Dimensions</b>	145 x 145 x 185 mm
<b>Weight</b>	650 g
<b>Protection</b>	IP67
<b>Digital Input Digisens sensors</b>	Parameters : pH, ORP, Suspended Solid, Sludge blanket, Turbidity, Temperature, Conductivity, Salinity, Dissolved oxygen, TOC, COD, BOD...
<b>Battery</b>	Pack Lithium 3,6V 26 Ah
<b>Security</b>	Customizable SMS and email alerts (AquaMod' battery, AquaGat' power supply, high / low sensor value, sensor fault ...)
<b>Mechanical</b>	User replaceable battery without tools
<b>Temperature environnement</b>	-10°C à +50°C
<b>Sealing</b>	By hand tightening, IP68 certified 1 week 1 m water. No tools needed
<b>Norm</b>	In compliance with the marking CE
<b>LoRaWan network range</b>	3km in urban areas. 15km in rural areas (According to antenna and gateway)
<b>Data acquisition</b>	From 2 minutes

#### *AquaGat' Gateway specifications:*

<b>Operating temperature</b>	-10°C à 55°C
<b>Storage temperature</b>	-10°C à 60°C
<b>Power Voltage</b>	5Vdc / 2A via mini-USB port
<b>Wireless LAN</b>	802.11 b/g/n 2.4G
<b>Frequency Band</b>	EU 862~870 MHz / US 902~928 MHz / India 865~867 MHz / AS 923 MHz
<b>WAN Protocol</b>	LoRaWAN
<b>Transmit RF Power</b>	0,5W (up to 27 dBm)
<b>Received Sensitivity</b>	Down to -142 dBm
<b>Dimensions (mm)</b>	Length : 116. Weight : 91. High : 27
<b>Weight</b>	160g
<b>Sécurité</b>	AES 128
<b>Antenna Type</b>	Built-in Wi-Fi antenna one (1) external SMA LoRa antenna
<b>Interface</b>	1 LAC 10/100Mbps, 1 USB 2.0 for upgrade and 3/4G dongle, 4 LED indicators