AQUALABO

Smart water solutions

AQUAMOD'

AUTONOMOUS WIRELESS **REAL-TIME COMMUNICATION SOLUTION** FOR DIGISENS PONSEL DIGITAL SENSORS

LoRaWAN™

ADVANTAGES

- Local and independent radio communication network
- Transfer of the secure data
- No IT management, only Internet browser for operation
- Real time visualization
- 2 years autonomy minimum

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 …)

PONSEL BY AQUALABO

AQUAMOD' SOLUTION

Our solution AquaMod' 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, via an independent local area network LoRaWAN.

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.

THE MONITORING OF YOUR REAL TIME DATA WAS NEVER SO SIMPLE!

Example of configuration.

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.

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 …,

AQUAMOD' MODULE SPECIFICATIONS

Autonomy	2 years minimum, to more than 5 years according to application
Dimensions	145 x 145 x 185 mm
Weight	650 g
Protection	IP68
Digital Input Digisens sensors	Parameters : pH, ORP, Suspended Solid, Sludge blanket, Turbidity, Temperature, Conductivity, Salinity, Dissolved oxygen
Battery	Pack Lithium 3,6V 26 Ah
Security	Customizable SMS and email alerts (AquaMod' battery, AquaGat' power supply, high / low sensor value, sensor fault ...)
Mechanical	User replaceable battery without tools
Temperature environnement	-10°C à +50°C
Sealing	By hand tightening, IP68 certified 1 week 1 m water. No tools needed
Norm	In compliance with the marking CE
LoRaWan network range	3km in urban areas. 15km in rural areas (According to antenna and gateway)
Data acquisition	From 5 minutes
Available version	Aqua Mod' EU 868 Aqua Mod' US 915 Aqua Mod' AU 915

DIGITAL SENSORS

Digital "smart" sensors

- All calibration data (factory coefficients, offset, slope) are stored in the probe,
- Digital technology for extreme reliability measurements without interference.

Robust probe in field and laboratory

- Probes from more than 50 years of experience PONSEL
- Applications waters, drinking water, wastewater, sewage...

		Principle	Range	Precision	Material	
OPTIC	**Oxygen**	Optical fluorescence	0,00-20,00 mg/L 0 – 200 %	± 0,1 mg/L ± 1 %	PVC special membrane, 316L stainless steel or titanium, herazil	Temperature Compensation via CTN
	Turbidity	IR Nephelometry (diffusion 90°)	0,0-50,0 NTU 0,0-200,0 NTU 0-1000 NTU 0-4000 NTU Automatical range NTU 0 – 4500 mg/L	< 5% of reading	PVC, POM-C, PMMA, Inox	Temperature Compensation via CTN
	Suspended Solid sensor	Optical IR (870 nm) based on IR absorption	Sludge blanket : 0-100 % SS : 0-50 g/L Turbidity : 0-4000 FAU	SS< 10 % Turbidity : +/- 5% (range 200-4000 FAU) Sludge blanket : +/- 2%	DELRIN, Nickel-plated brass, EPDM	Temperature regulation of optics via CTN
	VB5 Sludge Blanket Detection sensor	Optical IR (870 nm) based on IR absorption	0-100%	+/- 2%	DELRIN, Nickel-plated brass, EPDM	Temperature regulation of optics via CTN
ELECTROCHEMISTRY	**pH/T°C**	combined Electrode (pH/Reference)	0,00 – 14,00 pH 0,00 to +50,00 °C	± 0,1 pH	Special glass pH Reference Ag/AgCl to gelled electrolyte Temperature: CTN	Temperature Compensation via CTN
	Redox	combined Electrode to peak of platinum	- 1000,0 to + 1000,0 mV	± 2 mV	Delrin, PVC, glass, platinum	Reference Ag/AgCl to gelled electrolyte
	Redox Annular	combined Electrode to ring of platinum	- 1000,0 to + 1000,0 mV	± 10 mV	Delrin, glass, platinum	Reference Ag/AgCl to gelled electrolyte
	Conductivity	4-electrode amperometric	0-200,0 µS/cm 0 –2000 µS/cm 0,00 –20,00 mS/cm 0,0 –200,0 mS/cm Automatical range	± 1 % of full scale	2 graphite electrodes, 2 platinum electrodes DELRIN	Temperature Compensation via CTN
	Salinity	4-electrode amperometric	5,00-60,00 g/Kg	< 5 % of full scale	2 graphite electrodes, 2 platinum electrodes DELRIN	Temperature Compensation via CTN
	Inductive Conductivity	Inductive Method	0-100 mS/cm	< 5 % of full scale	EPDM, PVC, Inox	Temperature Compensation via CTN
	Inductive Salinity	Inductive Method	5,00-60,00 g/Kg	< 5 % of full scale	EPDM, PVC, Inox	Temperature Compensation via CTN