AQUAS
Simple. Reliable. Intelligent.

H2O

Water Quality Spectrometer

- UV254
- COD
- CODMn
- TOC
- BOD
- DOC
- NO3
- NO2
- Turbidity
- SS
- Color
- Chloramine
- HS-
- O3
- Chl-a
- BTX
- Temperature
- Fingerprint

RS485 Communication. All-in-One Solution.

ISO9001 Certification RoHS CE FC

With the headquarter based in Neihu Technology Park, Taipei, Taiwan, AQUAS Inc provides core technology and international marketing strategies. Supported by our own R&D department, we specialize in manufacturing advanced water quality analyzers, open channel flow meters, multiparameter loggers and controllers, etc. We support various kinds of applications such as flood precaution, sewer, drinking water, effluent, wastewater plant monitoring, surface water, ground water, water use in construction, and more intelligent water management and solution. Most of the AQUAS's products have received patents, and the related technologies are in the leading position in the world. Our products are famous as accurate, reliable, and easy to use. After more than 20 years of research and development, tens of thousands of AQUAS Online water monitoring systems have been successfully installed in cities around the world. AQUAS has been the market leader in the world in technologies such as optical water quality analyzer, radar ow meter and level meter, mobile communication, battery power supply and solid technics on robust SGS IP68 submersible enclosure. AQUAS has distributors in more than 60 countries around the world. Each of our employees will provide customers with the most effecient and high-quality services with their continuous efforts and strong faith.

Product Description

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The H2O water quality spectrometer is designed especially for real-time water quality monitoring includes NO3-N, NO2-N, UV254, COD, CODMn, TOC, BOD, DOC, Turbidity, SS, Color, Chloramine, HS-, O3, Chlorophyll a, BTX, Temperature, Fingerprint, Fingerprint Derivative...etc. The sonde is connected directly via RS485, providing real-time, simple, reliable, cost-saving data with remote monitoring, configuration and diagnostics capabilities. With robust IP68 enclosure, it is ideally installed in reservoirs, rivers and lakes.

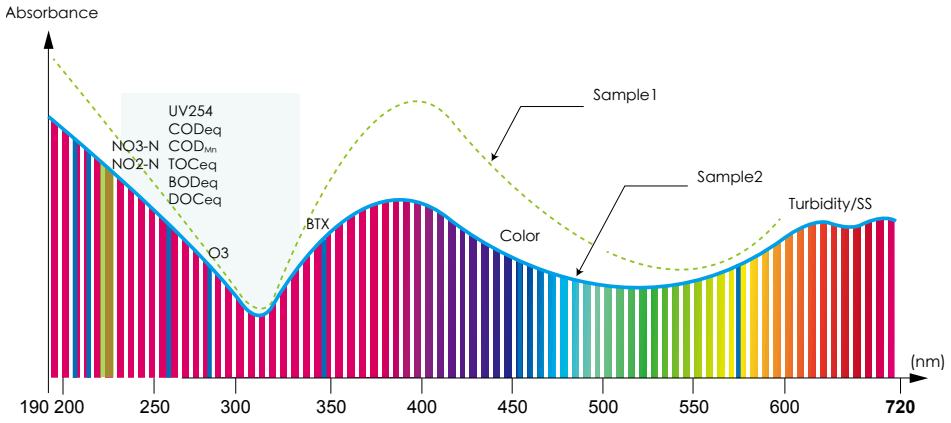
Advantages

- Simultaneously Measuring Multiple Parameters, including NO3-N , NO2-N, UV254, COD, COD_{Mn}, TOC, BOD, DOC, Turbidity, SS, Color, Chloramine, HS -, O3, Chlorophyll a, BTX, Temperature
- 190~720 nm UV -Vis Spectrometry Technology
- Reagent-free, Online Continuous Measurement
- In-Situ, No External Sampling Pumps or Pipes
- Real-time Measurement, Response Time Less Than 10 secs
- Advanced Algorithms to Provide Chemicals, Suspended Solids, Color Compen sation to Ensure Accuracy and Interference Reduction
- All-in-One Compact Enclosure, Built-in Transmitter and Sensors
- Robust IP68 Water Submersible Protection, Directly Installed in the Field, No Cabinet Required
- Plug & Play , On-line Realtime Measurement
- Ultra Low Power Consumption, Ideal for Outdoor Applications
- 1500 N Tensible Strength Kevlar Reinforced Cable
- Surge Protection for Power and RS485 Communication
- RS485 Digital Communication, Minimize Cabling and Engineering Cost
- Standard Modbus R TU Protocol, Direct Connected with PLC, HMI
- Sapphire Glass Windows to Prevent Scratch
- Innovative Nano Coating to Remain Window Clean
- Auto Cleaning Wiper, Less Maintenance
- Onboard Memory Allowing Users Easily Calibrate and Configure Sensor at Lab and Distribute to Various Fields Sites
- AQCFG Software Tool for Data Monitoring, Calibration, Configuration and Diagnosis

Measurement Principle

Reagentless UV-Vis Spectrum Measurement

H2O spectrometer continuously online realtime measures multiple water quality parameters directly in-situ without intensive sample pre-treatment.The lamp emits UV-Vis light passing through the sample to be analysed. The spectrometer resolve the wavelength into high resolution spectrum with advanced algorithms to provide the concentrations of multiple parameters and eliminates mutual interferences such as chemicals, turbidity, color and bubbles. Built-in an auto wiper to remove the fouling and contamination of optical windows to reduce the maintenance cost.



Applications


River and Stream


Industrial Process


Wastewater Effluent


Drinking Water


Agriculture


Fishery

System Architecture

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The H2O Series is built-in RS485 communication, providing seamless connections to public or private network.

AQWEB/AQOPC Station

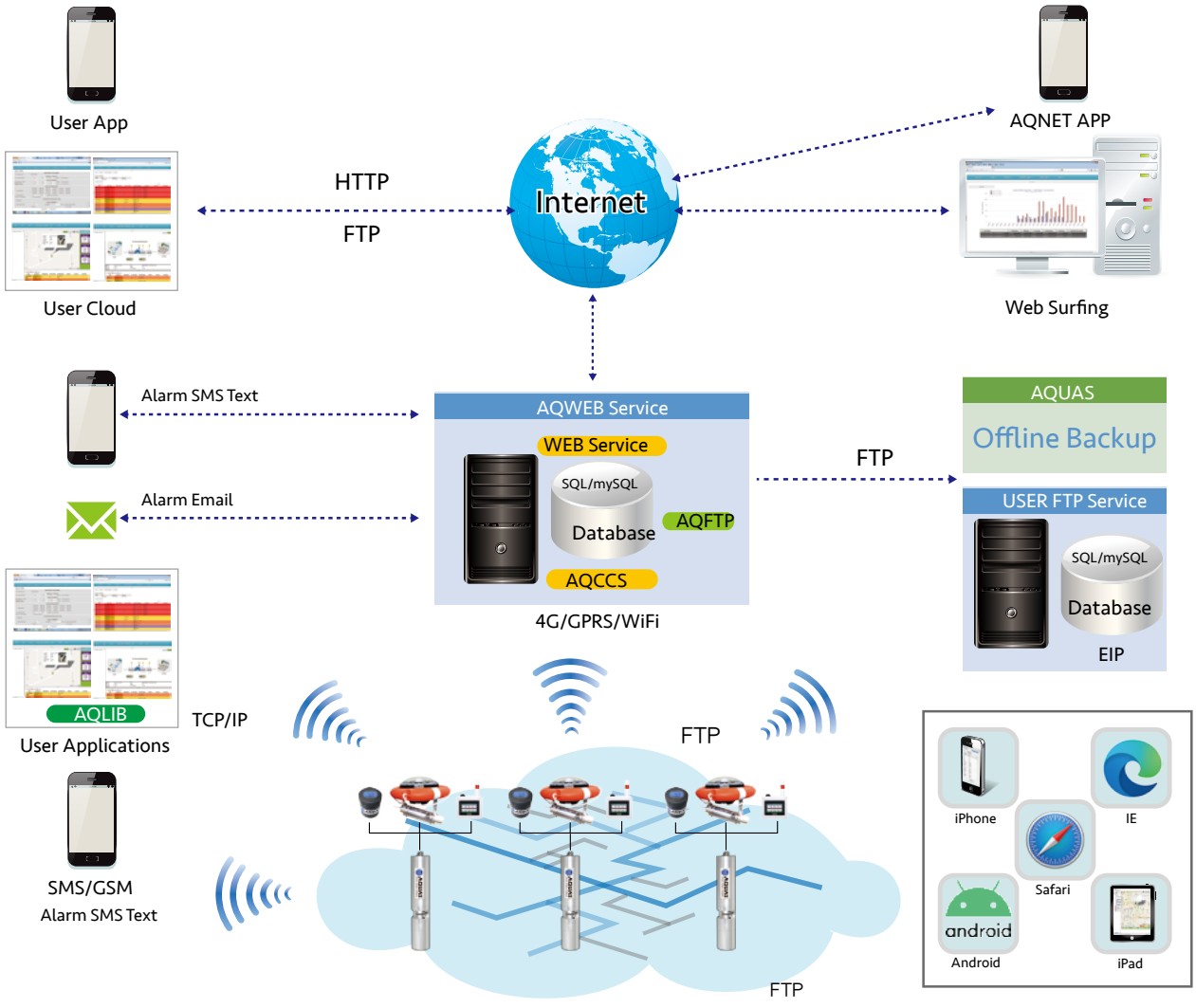
- Notebook Notebook with AQCFG software for configuration
- AQWEB WEB Server software for configuration, automatic data acquisition and storage, remote monitoring, alarming, control, Google Earth fusion display, data analysis, transient pressure analysis, time series trend graph and tabular report functions
- Seamless SCADA software and database connectivity via AQOPC OPC server
- AQLIB Application interface library (API) for developing user customized software

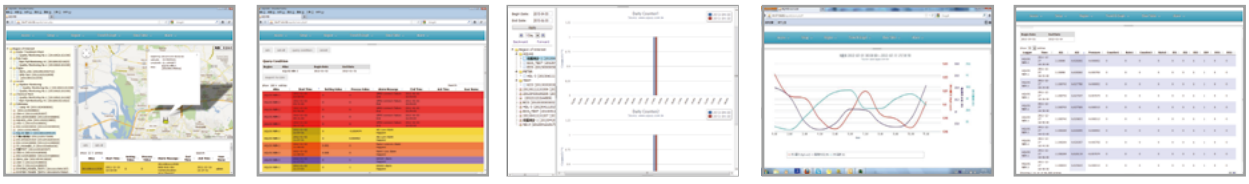
ARK Water Quality Buoy/ ECO Wireless Logger / HMI Multiparameter Controller

- Periodically sample sensors and logged with time stamp
- Borderless cellular communication
- Peer to peer communication

H2O Multiparameter Water Quality Spectrometer

- RS485 serial communication
- Standard Modbus RTU protocol





Monitoring & Operation | Alarm | Flow Chart | Trend | Data Analysis

Specifications

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▶ Main Unit	
General	
Measurement principle	reagent-free, UV-Vis 190~720 nm Spectrometry technology
Light source	Xenon flash lamp
Absorbtance resolution	256 wave length
Accuracy	±5 % in standard solution
Light path	0.3, 1, 5, 20 mm (selectable)
Measurement interval	10 secs to 1 hour (adjustable)
Operating temperature	0~50 °C
Operating pressure	max. 10 Kgf/cm²
Protection	IP68, continuous submersible to 100 m of water
Flow rate	max.3 m/s
Safety	CE, FCC
System Communication Port	
Function	Data collection, sensor calibration
Data Collection	Data format: RS485, 19,200 bps, 8 bits, no parity, 1 stop bit
Surge protection	1,500 VDC
Protocol	Modbus RTU
Housing	
Material	Titanium
Connector	IP68 M12 connectors
Connection	5-pin M16 plug
Cable	1500N tensile strength Kelvar reinforced cable
Dimensions	Φ75x416(H) mm
Weight	3.5 Kg

▶ Power	
External Power	
Voltage	5~12 VDC, 1 A ; Surge protection : 1,500 VDC ; ESD line protection:15 KVDC

▶ Maintenance	
Inspection and cleaning	every 3 months
Calibration	typically 6 to 12 months after installation

▶ Maintenance

Parameters	Unit	Path Length (mm)				Resolution
		20	5	1	0.3	
NO3-N	mg/L	0~5	0~20	0~100	0~300	0.01
NO2-N	mg/L	0~5	0~20	0~100	0~300	0.01
UV254	1/m	0~200	0~800	0~2,500	0~7,000	0.01
CODeq	mg/L	0~200	0~800	0~2,500	0~7,000	0.01
CODMn	mg/L	0~50	0~200	0~500	0~1,500	0.01
TOCeq	mg/L	0~50	0~200	0~1,000	0~3,000	0.01
BODeq	mg/L	0~50	0~200	0~1,000	0~3,000	0.01
DOCeq	mg/L	0~50	0~200	0~1,000	0~3,000	0.01
Turbidity	NTU	0~100	0~500	0~2,500	0~2,500	0.01
SS	mg/L	0~200	0~1,000	0~5,000	0~5,000	0.01
Color	Hazen	0~500	0~2,000	0~10,000	0~30,000	0.1
Chloramine	mg/L	0~1	0~15	0~50	0~150	0.01
HS⁻	mg/L	0~5	0~50	0~250	0~750	0.01
O3	mg/L	0~1	0~10	0~50	0~150	0.01
Chlorophyll a	µg/L	0~50	0~235	0~500	0~1,500	0.01
BTX	mg/L	0~10	0~100	0~500	0~1,500	0.01
Temperature	°C	0~50	0~50	0~50	0~150	0.01

Ordering

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Optionals:	Logger & Connector
Order No.	Description
ECO	Multiparameter Logger and Controller
ARK	Water Quality Monitoring Buoy
FLO	Open Channel Flow Logger and Controller
HMI	Multiparameter Controller

Ordering Codes: H2O 1 — □ — 005 — 3 — 2 — 1 — □

Main Unit
Immersion — 1

Light Path (mm)
0.3 — 0
1 — 1
5 — 2
20 — 3

Cable Length (m)
5 — 005

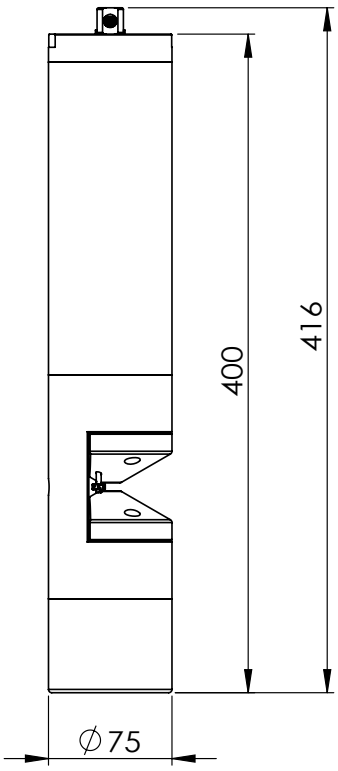
Cable Type
PUR — 3

Housing
Titanium — 2

Wiper
Built-in — 1

Wire Connection
Bare Wire — 0
M12 Connector — 1

▶Dimensions (unit: mm)



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