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STAC2

SECOMAM BY AQUALABO

DATASHEET

STAC2

STAC2: On-line UV-Vis Alert Analyser for on-line water chemical quality monitoring of BOD / COD / TOC / TSS and Nitrates

- Fingerprint capability: scanning from 190 up to 800nm with unique 1 nm bandwidth
- Versatile sampling: 4 channels and 10 parameters available per channel
- Data connectivity: both local and cloud based data collection by means of a WiFi connection
- Real-time visualization of the water's fingerprint: BOD / COD / TOC / Nitrates / Pesticides / Aromatic Hydrocarbons
- Secomam UV-Vis technology since 1966!
- Robust and rugged design with high-tech data handling

Areas of application:

- Wastewater treatment plant (follow-up purification performance, input, discharge, etc.)
- Drinking water plant (pumping station, tank management, etc.)
- Natural water
- Process water
- River monitoring
- Aquaculture

STAC2 Solution for Water Quality Monitoring:

Water is largely transparent to ultraviolet and visible light. The STAC2 analyser measures the absorbance of ultraviolet light, at a broad range of wavelengths. Organic content of the sample stream absorbs UV light, and thus the measurement of UV absorbance provides an adequate indication of the organic concentration in the sample. It thereby creates a unique fingerprint of the water. The STAC2 absorbance signal can be correlated using different chemical methods such as BOD/COD/TOC and nitrates by applying a mathematical adjustment factor or gradient to the measured value. If the water source changes, the correlation gradient may also change. The STAC2 has the flexibility to use 4 different streams and to combine this with up to 10 different models per sample stream. As UV absorbance may be affected by the turbidity content of water, the STAC2 analyser does compensate for this.

Monitoring your real-time data was never been so simple!

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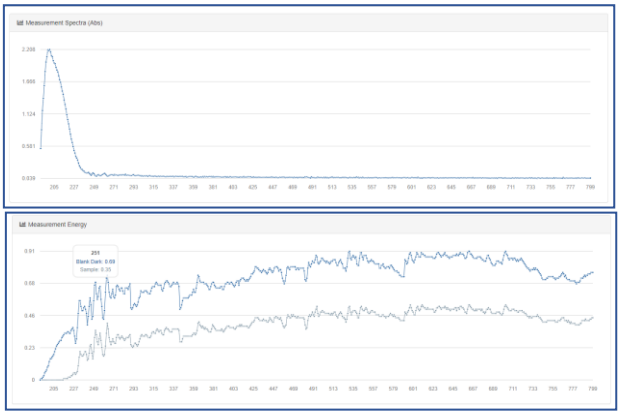
STAC2 Full SpectrumTechnology and Data Handling:



The STAC2 scans and measures the entire absorption spectrum and creates a unique fingerprint from the sample. STAC technology is used by many customers worldwide as a vital decision making tool in their water quality monitoring. The STAC2 is the only analyser in the world that can measure and analyze a multitude of organic substances without using reagents.

The STAC2 analyser is a technologically advanced instrument, able to be connected to an Ethernet or WIFI network.
There is no screen on the instrument itself, and the human interface is based on an embedded Web page, which users can access via the network. This Web Page enables the customer to manage the entire configuration, status and results of the STAC2.

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STAC2 – a genuine "industrial" UV-Vis analyzer:

The STAC2 uses innovative and patented technology to perform the following tasks:

• Estimate Organic Matter (BOD, COD, TOC) content, assess the TSS level and measure nitrate concentration.
• Check and detect undesirable substances (pesticides, aromatic hydrocarbons, etc.)
• Monitor water quality with continuous multi-parameter and nitrate analyses for surface water (rivers, lakes, & reservoirs). The analyser is ideal in the event of accidental pollution, especially for organic contaminants, municipal or industrial WWTP disruption
• Monitor influents and effluents for Wastewater Treatment Plants. As with surface waters, STAC2 can monitor water pollution (BOD, COD, TSS, NO3-) and water quality.
• Handle industrial applications such as high level chloride or organic chemicals.

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STAC2 unique detector:

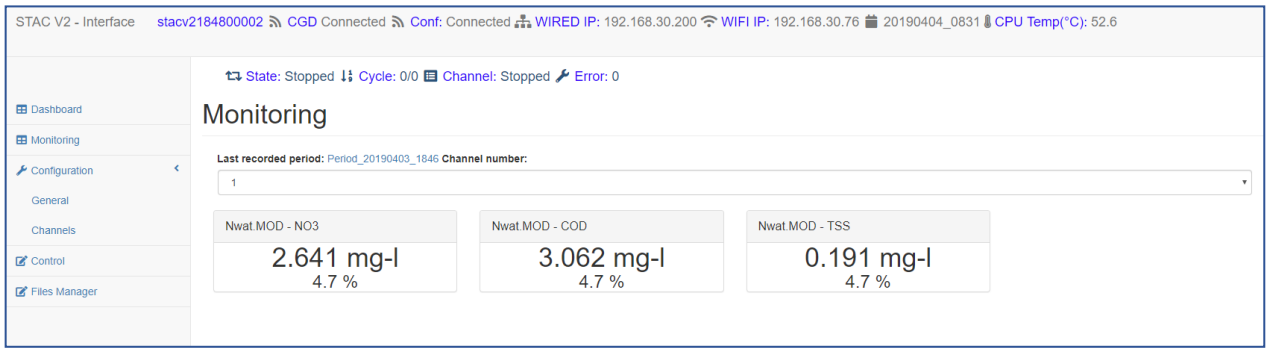
Xenon lamp with scanning capability from 190 to 800nm with 1nm bandwidth.

STAC2 unique sampling:

• Automatic and sequential sampling circuit rinsing and cuvette cleaning
• Automatic blank (reference sample) scanning to calculate and compare the absorbance spectra.
• Programmable automatic sampling from 5 minutes to 6 hours
• Pinching valves Ø 8 mm for TSS reading without filtration
• 4 different sample streams.

STAC2 datamining & connectivity:

The STAC2 analyser is a technologically advanced instrument that connects to an Ethernet or WIFI network.
The Web platform enables you to:
• Visualize your data in table or graph format,
• Export your data on an external USB storage stick.
• Set up fluid, sequential sampling and measurement parameters.
• Set up WIFI and Ethernet connectivity parameters.



In this example, data is saved every 15 minutes (editable by the user). It is possible to see the measurements tables or graphs (time scale modifiable by users: day, week or month).

STAC2 – the freedom to make & configure your own model:

The UV-PRO software gives users acquisition and digital processing freedom in terms of the graphic spectrum of measurements made during the analysis. The advantage lies in being able to measure and process spectra, improve your customized calculation models and calibrate the instrument.

STAC2 key points:

• Physical method with almost no consumables
• Very fast reading (< 2 minutes)
• Easy and little maintenance
• Quantitative and qualitative readings
• STAC2 Alert notification: comparison of the UV model and (deviation of the) UV spectrum
-> Water Quality information
• Built-in enclosures with aqueous samples isolated from the electronic parts
• EC standard
• Automatic cycle measurement start software option in the event of power failure.

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STAC2 analyser specifications:

Sample streams	4 Different samples
Dimensions	Height: 500 mm Width: 400 mm Depth: 265 mm
Weight	18 kg
Protection	IP53
Digital output	1x Ethernet RJ45 port for MODBUS and/or HMI access 1x WIFI connection for HMI access 1x USB port for USB Key recorded data history backup
Flow cells	Interchangeable 2, 5 and 50mm optical path
Cleaning	Automatic, chemical for tubing / Internal case by compressed air
Lamp	Xenon
Blank	Automatic
Data readout	On separate PC / tablet or mobile phone (optional)
Operating temperature	10°C to 40°C / 50°F to 104°F
Data Storage	On internal SD Card. An internal security back-uo is performed daily on internal USB drive. Data export on internal USB key.
Mounting	Wall-mounted
Digital input / output	Through MODBUS TCP/IP and RTU
Power	24VDC +/-0.5VDC 3A or 100 – 240V (Optional) 50-60Hz with External Power supply
Measuring range	• COD : 2 to 8750 mg/L • BOD : 0.5 to 8750 mg/L • TOC : 1 to 7500 mg/L • TSS : 5 to 2500 mg/L • NO3 : 1 to 1000 mg/L • Turbidity compensation

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Display Option – S200 Analog Outputs

The S200 displays the concentrations of the parameters measured by STAC2 and the models used to determine these concentrations.
It also allows to recover data from 2 parameters on 4-20 mA outputs

Connection STAC2	Via Modbus Output STAC2
2 analog outputs	0/4-20 mA with galvanic insulation 500Ω, resolution < 0.010 mA
Digital interface	Slave Modbus RTU
Power supply	230 V/AC, +/- 10% (50/60 Hz) 110 V/AC, +/- 10% (50/60 Hz) 16 VA consumption
Display	Backlit LCD screen 4x20 characters 5 directional button keyboard
Dimensions (HxWxD)	160 x 165 x 85 mm
Weight	1.1 Kg
IP index	IP 65
Operating temperature	-20 to +55°C Max. 90 % relative humidity at 40 °C not condensed
Storage temperature	-20 ± +65 °C

STAC2 & Secomam History:

The STAC2 is the successor to STAC1 which was developed by Secomam in Alès, France. The success story started back in the 90's as the "*Station Alert Compact*" (probably the 1st online UV analyser in the world!) in combination with the unique portable UV-Vis analyser (Pastel UV) and UV Pro modelling software. This unique set of instruments and software was way ahead of its time as it gave customers the power and freedom to create dedicated models and determine reference spectra from a set of water and wastewater UV spectra.

Secomam, founded in 1946, originally started in Paris but later moved the production to the south of France (Alès) where, since 2001, it has thousands of UV-Vis lab and on-line analysers sold all over the world. The heart of the technology is still the detector along with the modelling software, which gives users control over their water quality. With the complexity of (waste)water in mind, Secoman developed the UV Pro software based on an advanced UV Spectral Deconvolution (deconvolution is an algorithm-based process used to reverse the effects of convolution on recorded data). Owing to the Advanced Spectral Deconvolution Algorithms (Patent 00402038-4, 17 July 2000) built into the UV Pro software; users have the freedom to create their own dedicated water quality models.

Secoman was already, at that time, truly way ahead of the competition by offering their software free of charge on the internet to build loyalty among its customers and enable them to share their data worldwide!