

T E C H N O L O G Y W I T H A F U T U R E



vonRollhydrobox

The online system
for the permanent
monitoring of water
quality

vonRollhydrobox – the online system for the permanent monitoring of water quality

The vonRollhydrobox is a modular, compact and robust online system for the permanent monitoring of chemical and physical parameters of water. If the vonRollhydrobox is enhanced with the BioSentry option, microbiological impurities such as E-coli, Giarda, cryptosporides and spores are also quantitatively and selectively detected according to their types using the laser-light scattering method and reported on. The instrumentation and configuration of the vonRollhydrobox are based on a risk-analysis for a particular drinking-water supply system and thus specified according to its actual needs.

The PLC functionality of the central processing unit makes it suitable for the collection of process parameters such as water level, water flow and pressure etc. and thus allows the control of peripherals as well as pumps, fittings or other equipment. Complex custom monitoring and control functions can also be configured at any time by the customer as required.

The vonRollhydrobox can also be integrated into existing remote control systems without any difficulty.



Multi-parameter transducer with CPU, data logger and touch-Screen

Multi-parameter measurement block hydraulics section



Touch-Screen LCD display with back lighting, with which all parameter values as well as all system information can be displayed numerically and graphically.

Applications

- Drinking water supply systems
- Industrial process water supply
- Pharmaceuticals and chemical industries
- Food industry

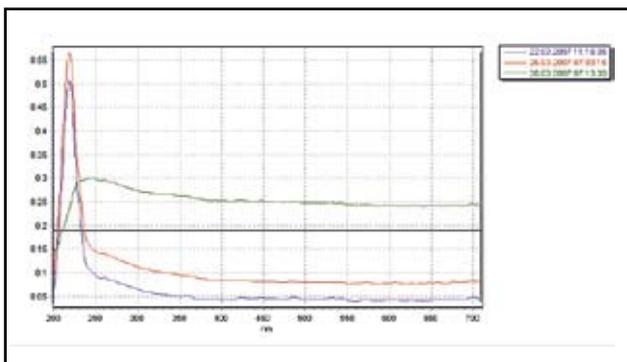
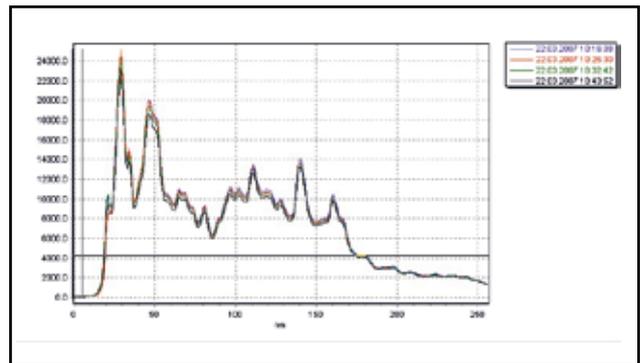
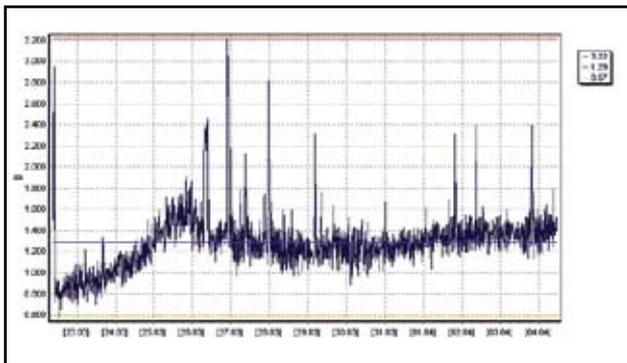
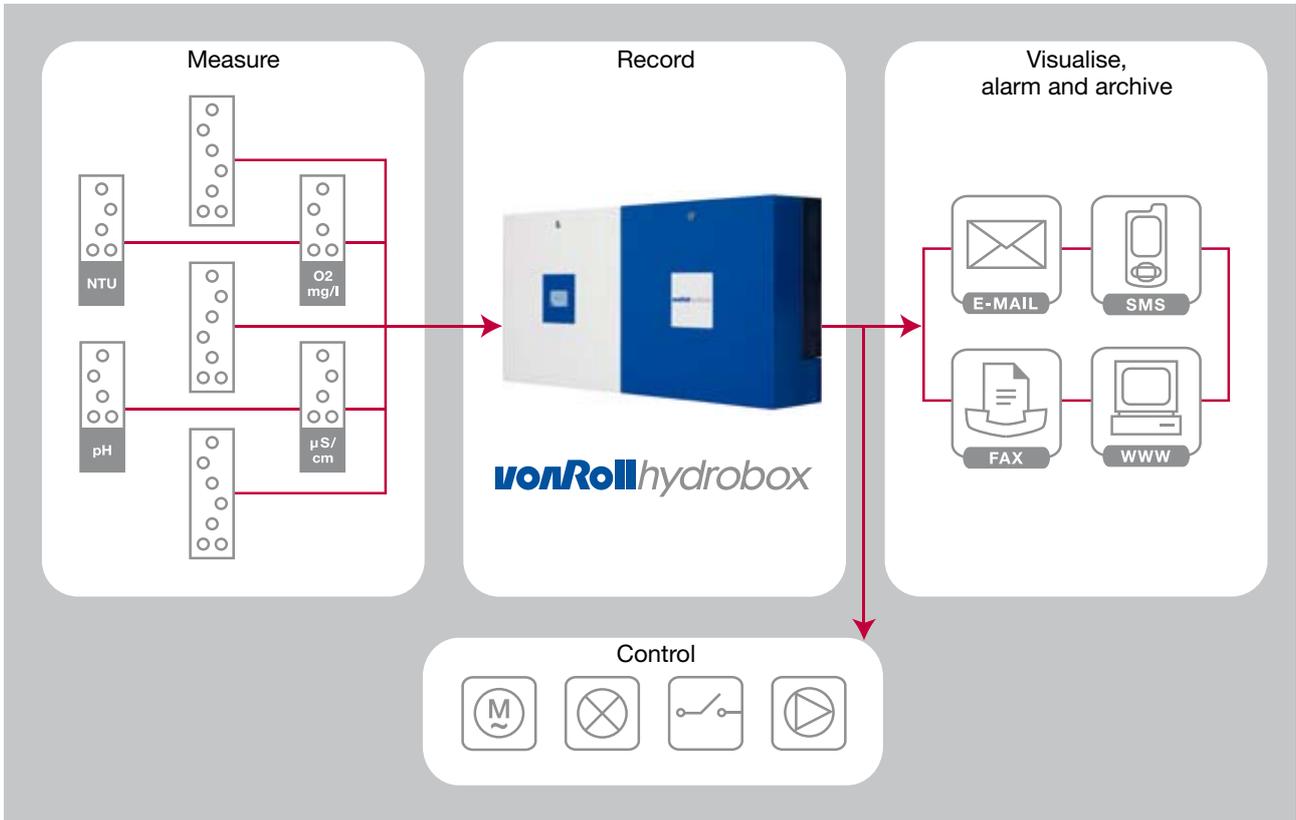
Characteristics

- Permanent measurement and recording of pH value, redox potential, free chlorine, dissolved oxygen, turbidity, conductivity, temperature, UV-VIS spectrometer 190 - 720 nm for the definition of SAK-254, TOC/DOC and nitrate content using the correlation method
- Integrated control functions are programmable as required
- Integration of commercially available sensors and actuators
- Integration and connection to existing or higher level remote control systems
- Option for the installation of a measurement network according to customer requirements
- Latest data transfer technology for telemetry using GSM, GPRS, W-LAN
- Modular component concept and therefore extendable at any time
- Data-logging on a PC with on-screen visualisation
- Alarms via mobile phone when limit values are exceeded
- Modular system, extendable and adaptable to meet customer requirements

Multi-parameter measurement block



Measurement – recording – visualisation – control



Technical data

Measurement-relevant technical data for chemical and physical parameters

	Measurement principle	Measuring range	Resolution
pH value	Galvanic, glass electrode	0.00 ... 14.00 pH	0.01 pH
Redox potential	Galvanic, platinum electrode	- 2000 ... + 2000 mV	1 mV
Free chlorine	Galvanic, double-membrane electrode	0,00 ... 2,00 mg/l	0,01 mg/l
Ozone	Galvanic, double-membrane electrode	0,00 ... 2,00 mg/l	0,01 mg/l
UV-VIS spectrometer	Optical, Xenon 180° photo-array	190 ... 720 nm	2 nm / 256 pixels
Turbidity	Optical, infrared LED	0.000 ... 10.000 FNU	0.005 FNU
Dissolved oxygen	Galvanic, special alloy electrode	0,00 ... 20,00 mg/l	0,01 mg/l
Temperature	NTC resistance measurement	- 10,0 ... + 60,0 °C	0,1 °C
Conductivity	Inductive with compensation	50 – 20'000 uS/cm	1 uS/cm
SAC 254	Correlated to the UV-VIS spectrometer at 254 nm	0,0 ... 20,0 E/m	0,1 E/m
TOC / DOC	Correlated to the UV-VIS spectrometer at 254 nm	0,0 ... 20,0 mg/l	0,1 mg/l
Nitrate	Correlated to the UV-VIS spectrometer at 254 nm	0,0 ... 100,0 mg/l	0,1 mg/l

Signal inputs/outputs additionally available

Analogue signal inputs	1 x 4-20 mA	Further sensor modules can be connected via the CAN-bus interface as desired, further parameters can be measured in this way
Digital signal inputs	2 x potential-free 2 x impulse	
Analogue signal outputs	2 x 4-20 mA	
Digital signal outputs	2 x. relay 240 VAC 2A	

Central processing unit - technical data

CPU	32-bit processor with 128 MB memory card and LINUX operating system
Display	LCD graphical display 240 x 128 pixel with touch-panel
Interfaces	1 x. CAN-Bus 1 x Ethernet 10/100Mbit 1 x USB 1 x GSM
Alimentation	24 VDC 2 A

Mechanical and electrical data

Measurements (L x H x W)	1290 x 640 x 300 mm
Weight	65 kg
Power supply	230 VAC 50/60 Hz or 24 VDC
Power consumption	30 Watt max.
Water connections	input and output DN 15
Working pressure	0.1 - 4.0 bar

Subject to change

vonRollhydrobox – BioSentry option

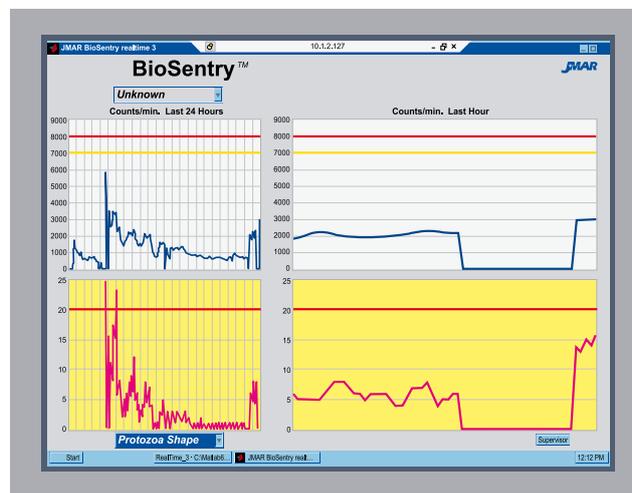
With the BioSentry option, the vonRollhydrobox can be enhanced to provide a permanent online monitoring system for the microbiological contamination of a water supply system. BioSentry uses laser fluorescence-activated through-flow technology for the registration of pathogenic germs such as E-Coli, spore bacteria, protozoa etc.

Characteristics

- Permanent, selective monitoring and recording of microbiological impurities
- Integrated control functions are programmable as required
- Integration and connection to existing or higher level remote control systems
- Option for the installation of a measurement network according to customer requirements
- Latest data transfer technology for telemetry using GSM, GPRS, W-LAN
- Data-logging on a PC with on-screen visualisation
- Alarms when limiting values are exceeded via text messages to mobile phones



vonRollhydrobox
BioSentry measurement unit



Graphical representation of measurement data

Example:
Display of «protozoa shape» in pre-alarm

The BioSentry module is connected in parallel to the vonRollhydrobox via the Internet interface in order to store the data collected and transmit it to the control centre.

With the «automatic sampling» option, a sterile bag connected to the system is filled with test water for further laboratory testing if limit values for the selective microbiological counts are violated. At the same time, the vonRollhydrobox transmits a text alarm via the mobile telephone system.

Applications

- Drinking water systems
- Industrial process water supply
- Pharmaceuticals and chemical industries
- Food industry

Technical data

Available recognisable microbiologic factors

Protozoa	Cryptosporidium parvum Giardia
Bacteria	E. coli Salmonella Shingella Pseudomonas Legionella
In preparation	Bacilli Algae Yeasts Others as required

BioSentry mechanical and electrical data

Measurements (L x H x W)	600 x 1000 x 300 mm
Weight	28 kg
Power supply	230 VAC 50/60 Hz
Power consumption	400 Watt max.
Water connections	Input and output DN 15

The service contract for continuous maintenance

During the development of the vonRoll *hydrobox*, the need for a user-friendly, modern maintenance concept was considered from the start. One of the results of this is the fitting of self-cleaning probes and their arrangement in the multi-parameter measuring block which features a simple layout and optimal accessibility. In this way, simple jobs such as the calibration of the pH or redox electrodes using a calibration solution can be carried out by the operator himself. Using the efficient data transfer module, calibration characteristics based on laboratory measurements are loaded automatically. Afterwards, the correct functioning the vonRoll *hydrobox* is automatically checked online.

Long-term operability can be optimally guaranteed with a maintenance contract from vonRoll hydroservices ag that is tailored to the customer's needs.

Service

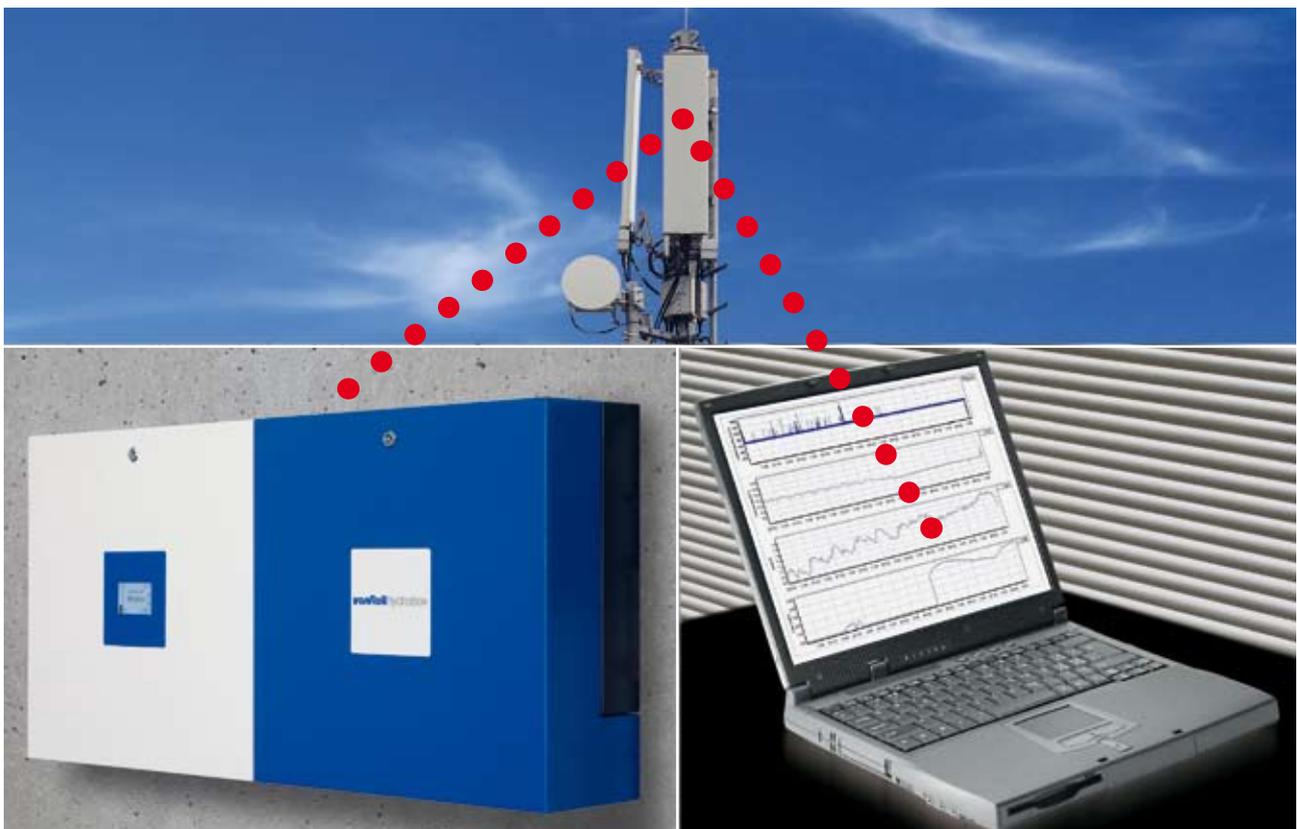
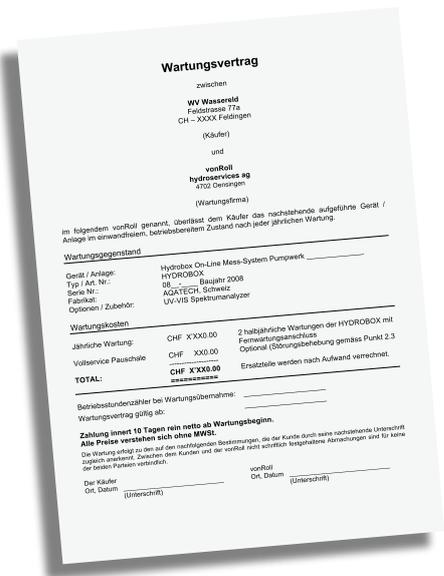
- Annual on-site inspection
- System cleaning and calibration

Service plus

- Periodic inspection and maintenance
- Transfer of measured data via GSM modem
- Secure storage of the measured data in an SQL database
- Remote maintenance and adjustment of the installation via GSM

Options

- Preparation of the results according to customer's requirements
- Data transfer to an Internet host server via GPRS
- Programming of remote control functions and setting of boundary values on the basis of the measured data



vonRollhydrobox

Water quality for us and our environment



Prevention of water pollution
Fish farming
Drinking water supply systems
Industry
Sports facilities
Sewage treatment plants



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