

WaterViewer

On-line particle counter for liquids, Water quality control measurements



Particle measurement system with built-in sensor, flow control, and sampling system.

Volumetric cell design of PAMAS sensors guarantees highest accuracy, resolution, and best statistics.

Optional features:

- Networking capabilities
- Expandable to 8 - 32 waterlines using automatic multiplexer unit
- Automated sensor cleaning
- Multiple analogue and digital I/O
- Signal light for status and alarm

Standard features:

- Programming capabilities make the system as versatile as a PLC
- True single particle counting
- Fully automated operation
- RS-422 serial communication port
- Standard size range: 1 - 200 μm (800 μm)
- Particle concentrations from 0 up to 200,000 p/ml
- Different dynamic range sensors available
- System easily connected to analogue and digital devices

Modular Design - User Benefits



Cost-Effective Multiplexer

When combined with the optional Waterline Input Multiplexer (Shown: 4MuX; White disk inside the bottom housing), the PAMAS WaterViewer is a very economic system for sequentially sampling multiple water sources.

The Multiplexer Unit is easily flushed to remove contamination within a few minutes. The optional Sensor Flushing Unit protects the sensor from possible blockages, e.g. as a result of mixing water coming from different sources. Therefore high concentration of iron or manganese is no longer a cause for frequent maintenance.

The result is reliable unattended operation for long periods of time at a low cost per waterline.



If Mobility Matters

Whilst the system is designed for wall-mount operation, the PAMAS WaterViewer is also available with an aluminium mounting rack as shown. This makes it a highly mobile system, for in-house or outdoor measurements including wells and settling basins. The IP 65 housing protects against ingress of water spray and rainfall.

The PAMAS WaterViewer also performs well with other liquids - Please ask for details.



Easy Service

The modular design of the system makes it easy to service and maintain. Two separate housings for the electronics and hydraulics reduce the risk of damage caused by any internal water leaks. Easy access to all electronic parts, sensor and the multiplexer help to keep service costs low. High-quality plastic and stainless steel fittings protect against corrosion. This ensures long-term stability of measurements and protects your investment. PAMAS offers service contracts and service on demand, at reasonable cost and with short response times. The system is designed to run 24h/365d per year.

Please ask for details.

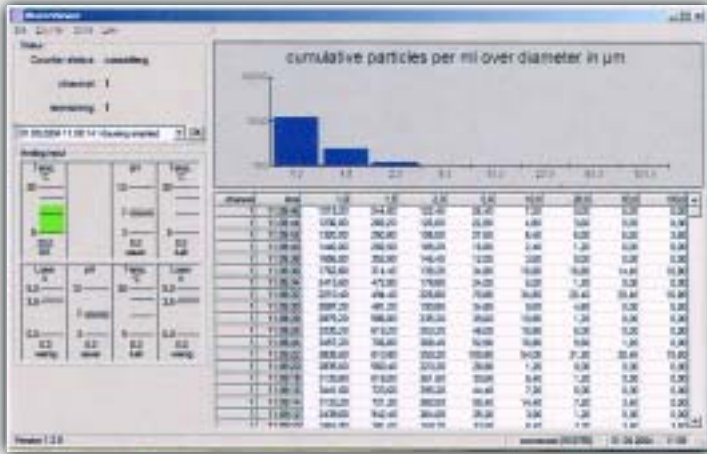
Some short information on sensitivity and particle number concentration:

A single spherical particle of 1 micron in diameter has a volume of 5.236×10^{-13} ml.

A single 1 micron particle detected per milliliter therefore is 0.5236 ppt (parts per trillion).

PAMAS particle counters even can measure much lower concentrations, starting from zero.

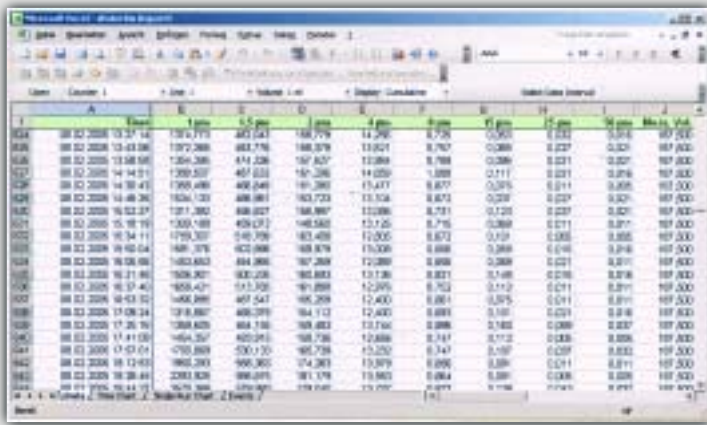
Software - Easy to Operate & User Friendly



Simple to Setup and Easy Data Download

Making life as trouble-free as possible - This was the concept when designing the software. Just a few operator steps are required to do the PAMAS WaterViewer setup.

The PAMAS WaterViewer can be run without a PC connected permanently as it is capable of storing more than 2,000 data sets in its internal ring-buffer memory for later download to a PC for analysis by the software. This Download itself is plug-and-play.



Complete water analysis, trend monitoring, and data storage

The PAMAS WaterViewer is more than just a particle counter. In reality it is a measurement system, that detects and sizes particles, and can be integrated into nearly any type of measurement system, that includes analogue or digital signalling. It can automatically respond to out of limit conditions, i.e. change measurement routines in respect of measurement results already obtained.

Multiple I/O channels make it as versatile as a PLC.

Many WaterViewers can be combined on a network of measurement devices that control a complete water treatment plant.

MultiplexUnit and SensorFlushUnit are available - running under full control of the WaterViewer. So a single measurement system can work on up to 32 water sources (or even more). Contamination debris build-up in the sensor can be removed automatically and is reported to the user.

This provides a previously unheard of flexibility in use - and is the best solution for water quality measurements available today.

The PAMAS WaterViewer has been designed to be modular making it easy to adapt to the user's changing requirements.

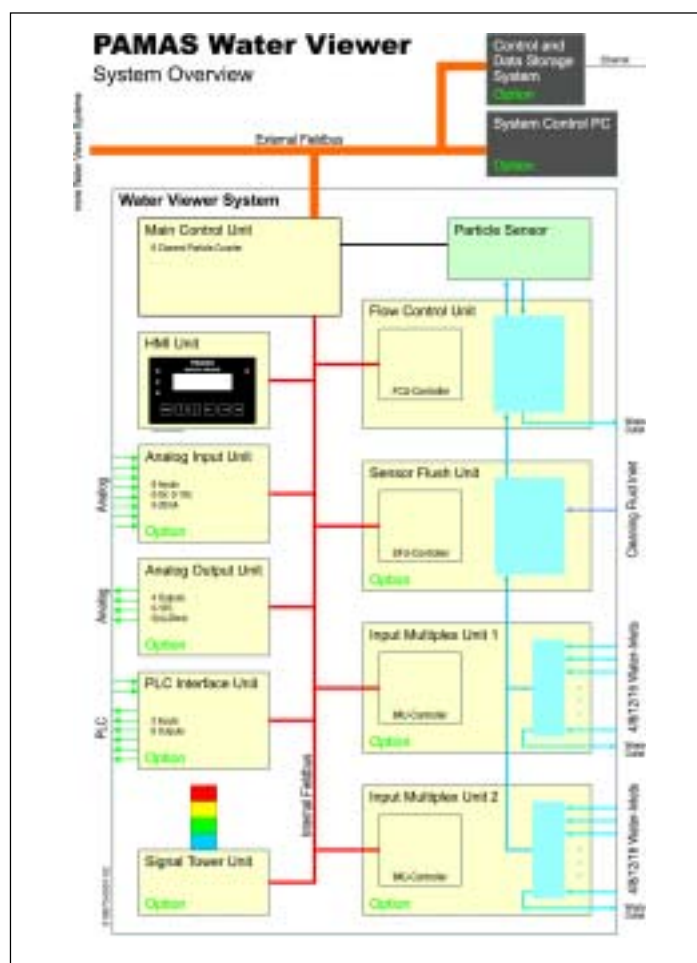
PAMAS-utilization of volumetric flow-cells guarantee that each particle passing through the sensor will be detected, counted and sized.

Calibration of sensors

Pulse height calibration with latex standards, according to ANSI/NFPA T2.9.6R1-1990 and ASTM F 658-80.

- Particle analysis in up to 8 size channels simultaneously
- Data storage in internal ring-buffer memory and long-term storage on external computer

- Constant flow rate through sensor by metering pump
- Communication ports for connection of system to external computer
- Flexible & programmable
- Can act as a PLC (option)
- Automated sensor flushing (option) removes deposited debris
- Safety features for unattended long-term use
- Easy to connect
- Data storage in standard data format
- 21 cfr part 11 (option)



Technical data

Sampling system:

metering pump, wear resistant ceramic piston and cylinder

Counter system:

WaterViewer, 8 size ranges

Power:

90 -240 V AC, 50 - 60Hz
12 - 30 V DC

Sensors:

HCBLD-15/25

Size range: 1-100 µm
Max. particle concentration:
200,000 p/ml at 10 ml/min

HCBLD-25/25

Size range: 1-200 µm
Max. particle concentration:
120,000 p/ml at 10 ml/min

HCBLD-50/50

Size range: 1-400 µm
Max. particle concentration:
24,000 p/ml at 25 ml/min

HCBLD-100

Size range: 2-800 µm
Max. particle concentration:
1,200 p/ml at 50 ml/min
(All concentrations given
at 7.8% coincidence.)

Housing:

IP 65

Relative humidity:

0 - 100%, even condensing

Pressure range:

0.5 - 4 bar
(specially designed
suction system available)

Size and Weight

(W x H x D) in mm
Single Water Line
300 x 400 x 242
approx. 11 kg
with MuX
300 x 600 x 242
4 MuX appr. 16 kg
8 MuX appr. 17 kg

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