

## **PAMAS AS3**

# **Automatic Sampling Particle Counting System for Liquids**

**Fully automated laboratory particle counter for the unattended measurement of up to 600 samples per day. Fluid samples including but not limited to:**

- Hydraulic Oil
- Turbine and insulation oils
- Gear oils
- Water based hydraulic fluids
- Phosphate ester based hydraulic fluids
- Diesel
- Kerosene



## Automatic Sampling Particle Counting System for Liquids

### Product features

- Customizable footprint size due to modular structure
- Enclosed sample area to prevent cross contamination via airborne particulate
- Customizable measurement settings including agitation, pre-run and sample volume
- Unattended measurement of up to 600 samples per day
- Undiluted measurement of samples with up to VG 100. Depending on the dilution applied, higher viscosities are possible.
- Use of customized sample vessels with a max. height of 180 mm
- Integrated sample preparation by ultrasonication
- Sample dilution function
- Automatic cleaning of sampling probe and flowpath
- Automatic refill and filtration of dilution fluid/cleaning fluid
- Data transfer in universal format (.xml)
- LIMS integration possible
- PDF measurement reports

### Accurate single particle counting technique

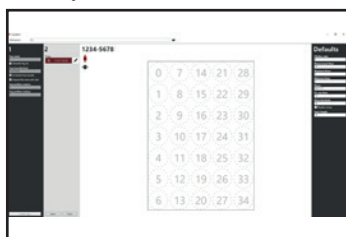
The volumetric sensor cell and sophisticated optical components guarantee high resolution and accuracy. Every particle passing the sensor is detected. This design ensures the true measurement of the fluid sample including ultra clean fluids.

### Calibration

The system is calibrated according to the international standard ISO 11171. This calibration is traceable to NIST standards.

### Software

The AS3 is delivered with the Autosampler 3 software for system set up, system operation and data transfer. Using the AutoEdit3 software, also included, the sample trays can be configured individually or set-up and stored for repeatable tray analyses. The measurement results can be exported as PDF as well as in .xml format. Integration to an existing customer LIMS is easily achieved.



Software AutoEdit3

### Sample preparation

Particle agglomerates are dissipated as the sample is agitated immediately before the measurement via the integrated ultrasonic probe. This stage of the sample preparation also assists in removing aeration from the sample. During the measurement of one sample the subsequent sample is being prepared, reducing overall operational time. The sampling tube and ultrasonic probe are cleaned automatically after each operational step to prevent cross-contamination. This is achieved by returning the sample tube and ultrasonic probe to the pre-filtered cleaning fluid reservoir.



sample tube and ultrasonic probe

### Dilution system

Samples with high particle concentrations, additives or water content and small sample volumes may require dilution. The AS3 has an integrated additional circuit complete with pump for the diluent to be introduced, if required. The samples are diluted directly before the measurement inside the instrument, so the remaining sample can be used for further analysis in an undiluted condition. A static mixer ensures an optimal combination of sample and diluent. The dilution ratio can be defined individually for each sample.

### Reporting of measurement results

According to the following standards: ISO 4406, SAE AS4059 as well as raw data.

### Modularity

The sample trays can be adapted to the number and size of the customer's existing sample vessels. The daily sample quantity can be increased up to 600 by the use of several trays.

### Technical data

#### Specifications

- 8 size channels
- Data transfer: ASCII Code, USB interface
- Power supply: 100–240 V, 50–60 Hz

#### Volumetric sensor PAMAS HCB-LD-50/50

Size range:  
4–70 µm(c) (ISO 11171)

Max. particle concentration:  
24,000 P/ml\* at 25 ml/min\*\*

Other sensors for larger particle sizes or higher concentrations are available on request.

#### Size

from 182 cm x 114 cm x 195 cm  
(W x H x D)

#### Weight

from 286 kg

- \* Coincidence error of 7.8 %
- \*\* Other flow rates are available on request



Management  
System  
ISO 9001:2015

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