

# PAMAS SBSS

## Particle Counting System for Liquids



### PAMAS SBSS Syringe Bottle Sampling System

Laboratory particle counter up to 10 bar and up to 1600 cSt with optional high pressure pump or with external pressure supply for the following applications:

- Hydraulic oils
- Insulation- and turbine oils
- Gear- and motor oils
- Water based hydraulic fluids
- Organic fluids or solvents
- Fluids with high vapour pressure
- Pharmaceutical fluids like infusion-solutions, water and parenterals

#### Optional:

Software according to USP, EP, BP, JP, KP. Instruments are continuously adapted to most recent standards and guidelines.

Volumetric cell design of PAMAS sensors guarantees highest accuracy and resolution for best statistical information.

- 0.5  $\mu\text{m}$  sensitivity according to ISO 21501
- 1  $\mu\text{m}$  sensitivity according to ISO 4402
- 1.5  $\mu\text{m(c)}$  sensitivity according to ISO 11171

## Constant sample flow and exact volume control

### PAMAS SBSS

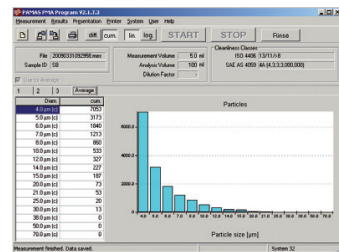
- Preprogrammable processor-controlled analysis allows automatic multiple sampling and standardised data report
- Preadjustable and automated sampling and measurement
- 16 free adjustable channels for particle size determination (32 channels on request)
- Threshold adjustment with D/A converter
- Pneumatic sampling with pressure up to 10 bar
- The vacuum mode can be used for sample degassing
- Size of sample bottle: maximum diameter: 7 cm maximum height: 18 cm
- Analysis volume: 1 ml up to 1,000 ml
- Constant sample flow and exact volume control by pressure balance via stepper-motor-driven syringe



For sample preparation, a pump including air dryer unit is available to degas the sample with vacuum and to filter and dry the compressed air.

### Software PAMAS PMA

- Automatic storage and documentation in readable format
- highest flexibility
- Printout including all sample parameters, numerical and graphical presentation and
- all main cleanliness classes.



Complete remote control using software PAMAS PMA with data storage in ASCII code

### Options

The PAMAS SBSS is available with different options:

- **PAMAS SBSS:** standard version with standard accessory pump (up to 5 bar)
- **PAMAS SBSS HP:** with high pressure pump or external pressure supply (up to 10 bar)
- **PAMAS SBSS Small Volume Version:** with small pressure container for small ampoules (1.5 -25 ml) of higher viscosity samples
- **PAMAS SBSS WG:** for water based hydraulic fluids (Water-Glycol)
- **PAMAS SBSS CL:** for corrosive liquids
- **PAMAS SBSS Skydrol:** for Phosphate-Ester based hydraulic liquids (e.g. aviation hydraulic fluids)

### Single particle counting system using volumetric sensor cells

A special manufactured sensor cell and the selection of sophisticated optical components guarantee high resolution and accuracy.

Each particle passing the sensor is detected and counted according to size. Up to 32 free adjustable size channels show a complete profile of the particle number and size distribution.

### Calibration of sensors

The Automatic Particle Counter is calibrated according to International Calibration Standards which are traceable to the NIST (National Institute of Standards and Technology). The PAMAS SBSS can be operated with a calibration according to ISO 11171 as well as ISO 4402. Accordingly, the ISO 4406 triple code can be printed as: 4 µm(c), 6µm(c), 14 µm(c) based on ISO 11171 or 2 µm, 5 µm, 15 µm based on ISO 4402.

### Standardised measuring reports

Classification of particle number and size within the sensors size range is according to any national and international standard. Printouts according to ISO 4406, SAE AS 4059, NAS 1638, GOST 17216, NAVAIR 01-0A-17 and GJB 420.

### Technical data

#### Counter:

- 8, 16 or 32 free adjustable size channels; the thresholds are free selectable within the measuring range of the particle sensor
- Backlit graphical LC-display with 320 x 240 pixel resolution.
- Integrated 32 column thermoprinter
- Data transfer: 8 Bit ASCII code, RS-232C port
- Power supply via alternating current: 100 V, 115 V, 220 V, 230 V, 50-60Hz

#### Pressure range:

- Standard accessory pump: up to 5 bar
- High pressure pump or external pressure supply: up to 10 bar

#### Volumetric sensors: PAMAS HCB-LD-50/50

Size ranges:  
1-200 µm (ISO 21501-3),  
1-400 µm: option on request  
1-100 µm (ISO 4402)  
4-70 µm(c) (ISO 11171)  
Max. particle concentration:  
24.000 P/ml\* at 25 ml/min\*\*

#### PAMAS HCB-LD-25/25

Size ranges:  
1-200 µm (ISO 21501-3)  
1-100 µm (ISO 4402)  
4-70 µm(c) (ISO 11171)  
Max. particle concentration:  
120.000 P/ml\* at 25 ml/min\*\*

#### PAMAS SLS-25/25

Size ranges:  
0,5-20 µm (ISO 21501-2)  
1-20 µm (ISO 4402)  
1,5-25 µm(c) (ISO 11171)  
Max. particle concentration:  
13.000 P/ml\* at 10 ml/min\*\*

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

#### Size

400 mm x 300 mm x 600 mm  
(W x D x H)

- \* Coincidence error of 7.8 %
- \*\* Various flow-rates can be selected



Management System  
ISO 9001:2008

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