

PAMAS SBSS

Particle Counting System for Liquids



Syringe Bottle Sampling System PAMAS SBSS

**21 CFR Part 11
Compliant Software**

**Standard particle
contamination control
up to 10 bar up to 400 cStokes:**

- Hydraulic oils
- Insulation- and turbine oils
- Gear- and motor oils
- Water based hydraulic fluids
- Organic fluids or solvents
- Fluids with high vapour pressure

Pharmaceutical Application

- Infusion-solutions
- Water

Optional: Software according to USP-XXIV/XXV/XXVII/XXVIII EP-2000, EP-4, BP-99, BP-2003, JP 96, KP VIII.

Optional: analysis according to any individual standards.

**For special applications up to
30 bar up to 20,000 cStokes in**

- Oils
- Polymersolutions
- Glues

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

- 1 μm sensitivity according to ISO 4402
- 4 $\mu\text{m(c)}$ sensitivity according to ISO 11171
- 1 μm sensitivity according to ANSI/NFPA

Constant sample flow and exact volume control



Single particle counting system using light blockage principle

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.

2 calibrations in 1 system

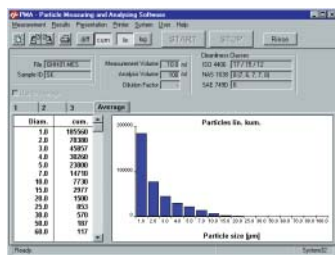
The SBSS can be operated with a calibration according to ISO 11171 as well as ISO 4402, accordingly the ISO 4406 triple code can be printed as: 4µm(c), 6µm(c), 14µm(c) based on ISO 11171 or 2µm, 5µm, 15µm based on ISO 4402.

Preprogrammable processor controlled analysis allows automatic multiple sampling and data report.

Besides the standard languages English, German, French, Spanish, Finnish and Polish, the system can be programmed to any other language on request.

Calibration of sensors

according to ISO 4402 as well as ISO 11171. Pulseheight calibration with latex standards, according to ANSI/NFPA T2.9.6R1-1990, ASTM F 658-80 or calibration according to individual standards, as well as calibration according to USP XXVIII.



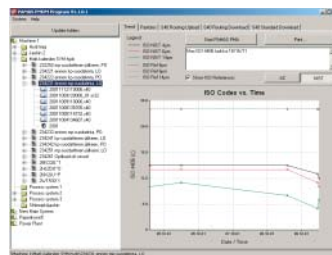
Complete remote control using PAMAS PMA program with data storage in ASCII code.

Remote control with PAMAS PMA program

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

Classification according to any standard

Classification of particle number and size within the sensors size range is according to any national and international standard. Printouts according to ISO 4406, ISO 4406: 1999 (c), SAE/AS 4059, NAS-1638, GOST-17216, GJB-420A.



PAMAS CMDM, is the state-of-the-art Contamination Monitoring Data Manager.

Results coming from PAMAS SBSS, S40, and digital membrane pictures, CMDM allows perfect and flexible Trend Monitoring of the different sampling points so that the necessary actions can be taken in time to create economical payback in Hydraulic Maintenance.

PAMAS CMDM is compatible with Windows® 95/NT or higher (incl. XP® Prof.).

PAMAS SBSS

- Preadjustable and automated sample evacuation
- Up to 32 free adjustable size channels
- Threshold adjustment with D/A converter
- Pneumatic sampling with pressure up to 10 bar
- High pressure sampling up to 30 bar (option)
- Sample volume: 5 ml up to 1,000 ml
- LV-container up to 2,000 ml
- Analysis volume: 1 ml up to 1,000 ml
- Constant sample flow and exact volume control by adjustable piston movement against pressure

Technical data

Counter:

- 8, 16 or 32 channel D/A-converter system
- Backlit graphical LC-display with 320 x 240 pixel resolution.
- 32 column built-in thermoprinter
- Data transfer: 8 Bit ASCII code, RS-232C port
- Power supply: 100 V, 120 V, 230 V, 240 V 50-60 Hz AC

Sensors:

HCB-LD-50/50

Size range: 1-400 µm
1 µm sensitivity (ISO 4402)
4 µm(c) sensitivity (ISO 11171)
Max. particle concentration: 24.000 p/ml* at 25 ml/min**

HCB-LD-25/25

Size range: 1-200 µm
1 µm sensitivity (ISO 4402)
3 µm(c) sensitivity (ISO 11171)
Max. particle concentration: 120.000 p/ml* at 10ml/min**

HCB-LD-25/15

Size range: 1-100 µm
1 µm sensitivity (ISO 4402)
3 µm(c) sensitivity (ISO 11171)
Max. particle concentration: 200.000 p/ml* at 10ml/min**

HCB-LD-100

Size range: 2-800 µm
Max. particle concentration: 1.200 p/ml* at 50 ml/min**

Size:

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

* Coincidence error less than 7.8 %

** Various flow-rates can be selected

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