



## **PAMAS 4132** **Online particle counter** **for filter test rigs**

### **Single Pass and Multipass filter efficiency analysis**

Analysis of high concentration levels  
in  $\beta$ -ratio applications

- High resolution analysis in 32 size channels
- Sensors can handle high pressures
- Remotely adjustable thresholds
- Different sensors for various applications

**Due to the volumetric cell design of PAMAS particle sensors, 100% of the sample flow volume is analysed this guarantees highest volume accuracy and reproducibility and best statistical information:**

- 1,5  $\mu\text{m(c)}$  sensitivity according to ISO 11171
- 1  $\mu\text{m}$  sensitivity according to ISO 4402
- 0,5  $\mu\text{m}$  sensitivity according to ISO 21501



# PAMAS 4132

## Standardised $\beta$ -ratio analysis



The **PAMAS 4132** is used as a particle counting system for Single & Multipass Filter test rigs. The standard system is designed to fit perfectly in the test rig of all manufacturers. With Multipass filter testing, the oil circulates in the test stand; with Single Pass filter testing, the liquid passes the filter only once and is then deviated to the out-flow.

For  $\beta$ -ratio analyses, the Single Pass Filter Test is performed with two particle counters. Two instruments - equipped with 32 size channels each - are also used for the Multipass Filter Test. The test rig with two particle

counters allows simultaneous upstream and downstream measurements. During the Multipass Filter Test, the liquid continuously flows through the system.

The online particle counting system **PAMAS 4132** analyses liquids of various viscosity degrees (e.g. oil, fuel, water, etc.). The system is adaptable to any filter test application.

### Calibration of particle sensor:

The particle sensor is calibrated according to International Calibration Standards which are traceable to the NIST (National Institute of Standards and Technology).

### Single particle counting system using volumetric sensor cells

A highly sophisticated sensor cell and optics guarantees best resolution and accuracy even under high pressure conditions. Particle counting can be achieved using many methods, but only the use of volumetric cells, like those used in PAMAS sensors, can guarantee that all particles passing through the sensor are counted. This results in better statistical analysis and prevents the loss of information compared to in-situ cells that detect only a small portion of the whole sample flow, especially as the samples are getting cleaner.



Due to its compact design, the online particle counting system PAMAS 4132 can be easily integrated into existing test rigs.

### Technical data

#### Power supply:

100 - 240 V AC / 50-60 Hz

#### Data transfer:

via Ethernet

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

Calibration range:

- 1-400  $\mu\text{m}$  according to ISO 21501
- 1-100  $\mu\text{m}$  according to ISO 4402
- 4-70  $\mu\text{m(c)}$  according to ISO 11171

Maximum particle concentration: 24,000 p/ml\* at a flow rate of 25 ml/min\*\*

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

Calibration range:

- 1-200  $\mu\text{m}$  according to ISO 21501
- 1-100  $\mu\text{m}$  according to ISO 4402
- 4-70  $\mu\text{m(c)}$  according to ISO 11171

Maximum particle concentration: 120,000 p/ml\* at a flow rate of 25 ml/min\*\*

#### PAMAS HCB-LD-15/25

Calibration range:

- 1-100  $\mu\text{m}$  according to ISO 21501
- 1-100  $\mu\text{m}$  according to ISO 4402
- 4-70  $\mu\text{m(c)}$  according to ISO 11171

Maximum particle concentration: 200,000 p/ml\* at a flow rate of 10 ml/min\*\*

#### PAMAS SLS-25/25

Calibration range:

- 0.5-20  $\mu\text{m}$  according to ISO 21501
- 1-20  $\mu\text{m}$  according to ISO 4402
- 1.5-25  $\mu\text{m(c)}$  according to ISO 11171

Maximum particle concentration: 13,000 p/ml\* at a flow rate of 10 ml/min\*\*

\* Coincidence error of 7.8%.

\*\* Various flow rates are available.

#### Temperature:

- Fluid temperature: 0-60° C
- Calibration temperature: 20 or 40° C

#### Size:

from 300 mm x 200 mm x 155 mm (L x W x H)



Management System  
ISO 9001:2015

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