



**PAMAS S40** Portable particle counter  
for offline and online measurement



**PAMAS S50** Online particle counter  
for cleanliness control as per ISO 4406



**PAMAS SBSS**  
Versatile particle analysing system  
for batch sampling



**PAMAS AS3** Autosampler for  
unattended oil analysis in laboratories  
having high

## **PAMAS Oil Instruments** **Particle Counters for** **Oil Contamination Analysis**

**IN THE WORLD OF PARTICLES PAMAS COUNTS**

# PAMAS Oil Instruments

## Oil contamination control through offline, online and on-site analysis



Particles circulating at high speed and pressure in the operating liquids of turbines, power plants, gearboxes and offshore applications are capable of damaging mechanical parts of the system. Preventive condition monitoring thus includes the regular control of the operating oil. The extensive PAMAS product range offers four different product types for oil contamination analysis: Depending on the site of analysis and on the method of

sample extraction, we distinguish laboratory particle counters (like the **PAMAS SBSS**) for batch sampling, fixed installations (like the **PAMAS S50**) for permanent online condition monitoring, autosamplers (like the **PAMAS AS3**) for unattended measurement of high quantities of samples, and portable particle counters (like the **PAMAS S40**) for field measurements on-site. PAMAS portable instruments can be used both for online measurement and for batch sampling. Industrial oil cleanliness, e.g. of hydraulic oil, lubricating oil or insulating oil, usually is classified in contamination classes. Cleanliness standards were established to enable uniform fluid cleanliness classification.

With the help of these standards, the user can easily and quickly assess the fluid's contamination level. In the oil industry there

are 7 approved industrial standards commonly used for fluid cleanliness classification. PAMAS particle counters are able to measure quantity and size of each individual contaminant in the oil. The measuring results about the oil cleanliness are reported in compliance with the common oil cleanliness standards. Furthermore, particle size distribution is given in cumulative and differential counts, so the exact number of particles is known for a certain size (e.g. > 4 µm(c)) or within a certain size channel (e.g. from 4 to 6 µm(c)).



Management System  
ISO 9001:2015

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ID 9105038017

Standard	Calibrating procedure and Calibration material	Particle size channels
<b>DEF STAN 91-91</b>	Procedure: ISO 11171 Test dust: ISO MTD	three size intervals for the particle sizes > 4 µm(c), > 6 µm(c) and > 14 µm(c)
<b>GJB 420</b>	Procedure: ISO 11171 Test dust: ISO MTD	six size intervals for the particle sizes > 4 µm(c), > 6 µm(c), > 14 µm(c), > 21 µm(c), > 38 µm(c) and > 70 µm(c)
<b>GOST 17216</b>	Procedure: ISO 4402 Test dust: ACFTD	size intervals between 0,5 and 200 µm
<b>ISO 4406:1987 (withdrawn)</b>	Procedure: ISO 4402 Test dust: ACFTD	two or three size intervals (> 5 µm and > 15 µm or > 2 µm, > 5 µm and > 14 µm)
<b>ISO 4406:1999</b>	Procedure: ISO 11171 Test dust: ISO MTD	three size intervals for the particle sizes > 4 µm(c), > 6 µm(c) and > 14 µm(c)
<b>NAS 1638 (withdrawn)</b>	Procedure: usually ISO 4402 Test dust: ACFTD	five size intervals for the particle sizes > 5 µm, > 15 µm, > 25 µm, > 50 µm and > 100 µm
<b>SAE AS 4059</b>	Procedure: ISO 11171	six size intervals for the particle sizes

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