

PSA PARTICLE SIZE ANALYZER



AMS is a Marquimm brand, empowering clients in mining with better control of their processes using Advanced Mining Systems. The AMS PSA is powered by the state-of-art German technology from SOPAT.

Some of the challenges in the mining industry:

[Ore liberation:]

Efficient release of valuable minerals from the ore matrix and their recovery is a fundamental challenge. Factors such as ore composition, mineralogy, and particle size distribution can influence the release and recovery rates.

[Energy consumption:]

The production of concentrate can be energy intensive, especially in the grinding and comminution processes. Reducing energy consumption and finding more energy-efficient methods are constant challenges.

[Grinding and Crushing:]

This process is high energy-consuming, especially when over or undergrinding takes place. Measuring PSD in real-time allows the site to adjust variables in real time to achieve optimal operational conditions, enabling an increase in throughput.

[Flotation and Leaching:]

Operating at the particle size setpoint allow for the highest recovery. Measuring the particle size in real time enables the process team to adjust the processes upstream and downstream, in real time.

The solution:

PSA – Particle Size Analyzer

- **Real-time PSD** results
- Detects particles, droplets, bubbles
- Particle size and shape
- Compact design – **quick and easy fit**
- **Easy maintainability**
- Low footprint
- **High availability (>99%)**



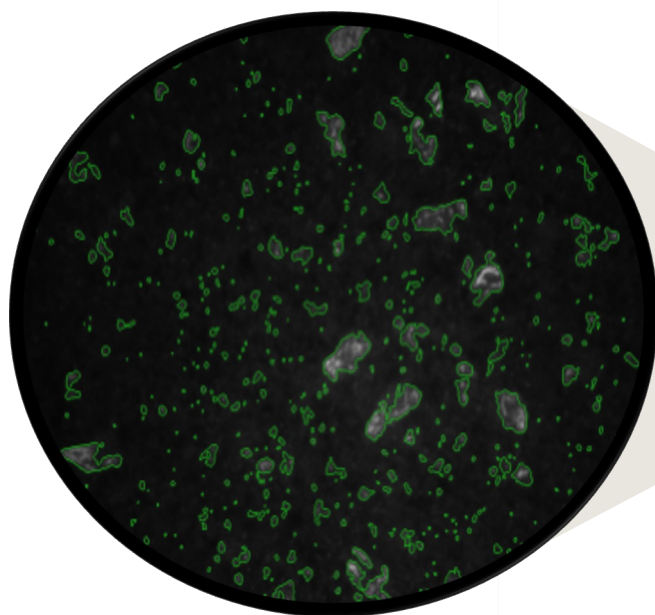
Field devices

PSA Field Devices
(Central box + Sensor)



Control room

PSA Server
(Workstation + Software)



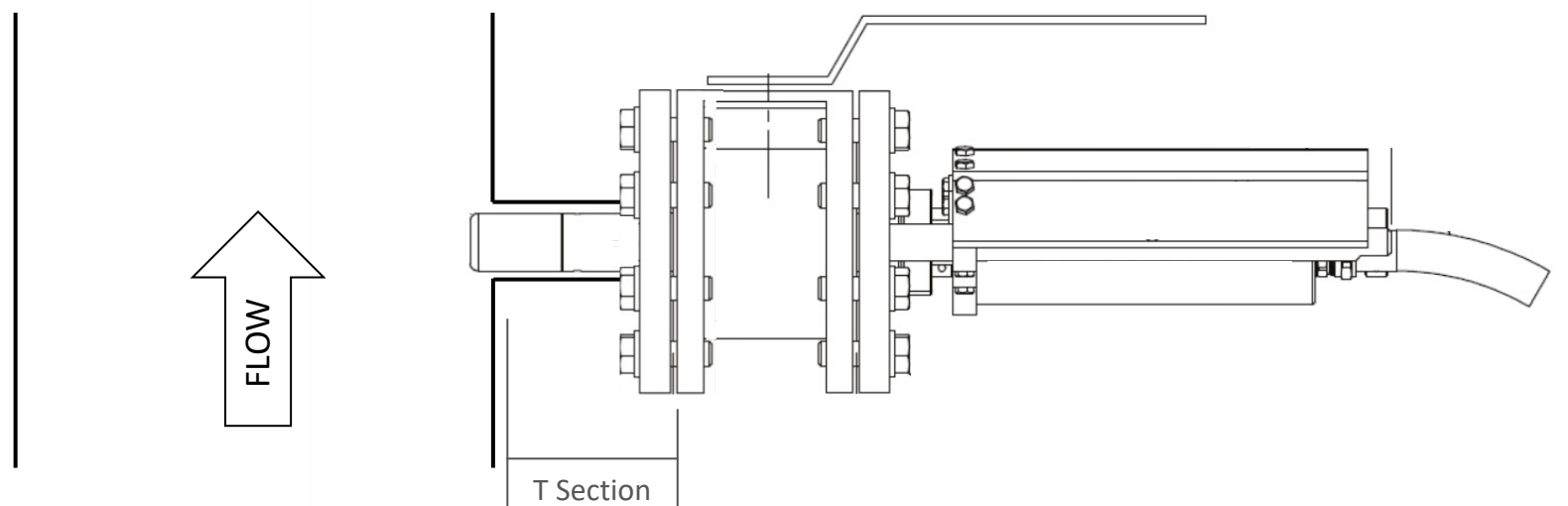
Real time insights



Installation:

Quick and easy

- Via flanged T-section
- Hot-tap sensor retraction tool
- Designed to resist vibrations and the aggressive process environment



Datasheet – Particle Size Analyzer

General	Particle Size Range	1 – 6500 μm (range to be defined)
	Principle of operation	In-process, real-time microscopy
	Method	2-dimensional (Feret-diameter)
	Software	Neural-networks-based, unlimited license (no subscription needed)
	Server	Proprietary, designed for the PSA and powered by an advanced software
	Communication	Modbus TCP/IP – other protocols available on request.
Field devices	Sensor Type	Macro-Video-Inline endoscopic probe
	Enclosure	Sensor: 1.4404 (316L) Central box: 316L
	Enclosure IP rating	IP65
	Wetted-parts	1.4404 (316L) with TiN coating, Yttrium stabilized Zirconia sheath and optical sapphire window, edge-metallized with Cr/Cu/Ni/Au and soldered with Au/Sn 80/20
	Pressure rating	10 bar (up to 40 bar on request)
	Temperature rating	-10°C to +130°C
	Connection between sensor and central box	Integrated, rugged cable conduit (rubber outer layer and Stainless Steel) with flexible glass fiber – 4m or 6m – IP68
Connection to the process (sensor)	Hot-tap for T-section - 1.4404 (316L) and 1.4408 (CF8M), DN50 – PN16	



Marquimm Netherlands B.V.
www.marquimm.com.br

AMS – Advanced Mining Systems
info@advancedminings.com
www.advancedminings.com