

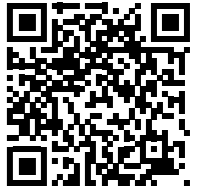
Perfection Through Competence: Inline Process Solutions for Mining and Ore Processing

Inline Process Solutions



Measure Inline. Measure in Real Time. Measure Anytime.

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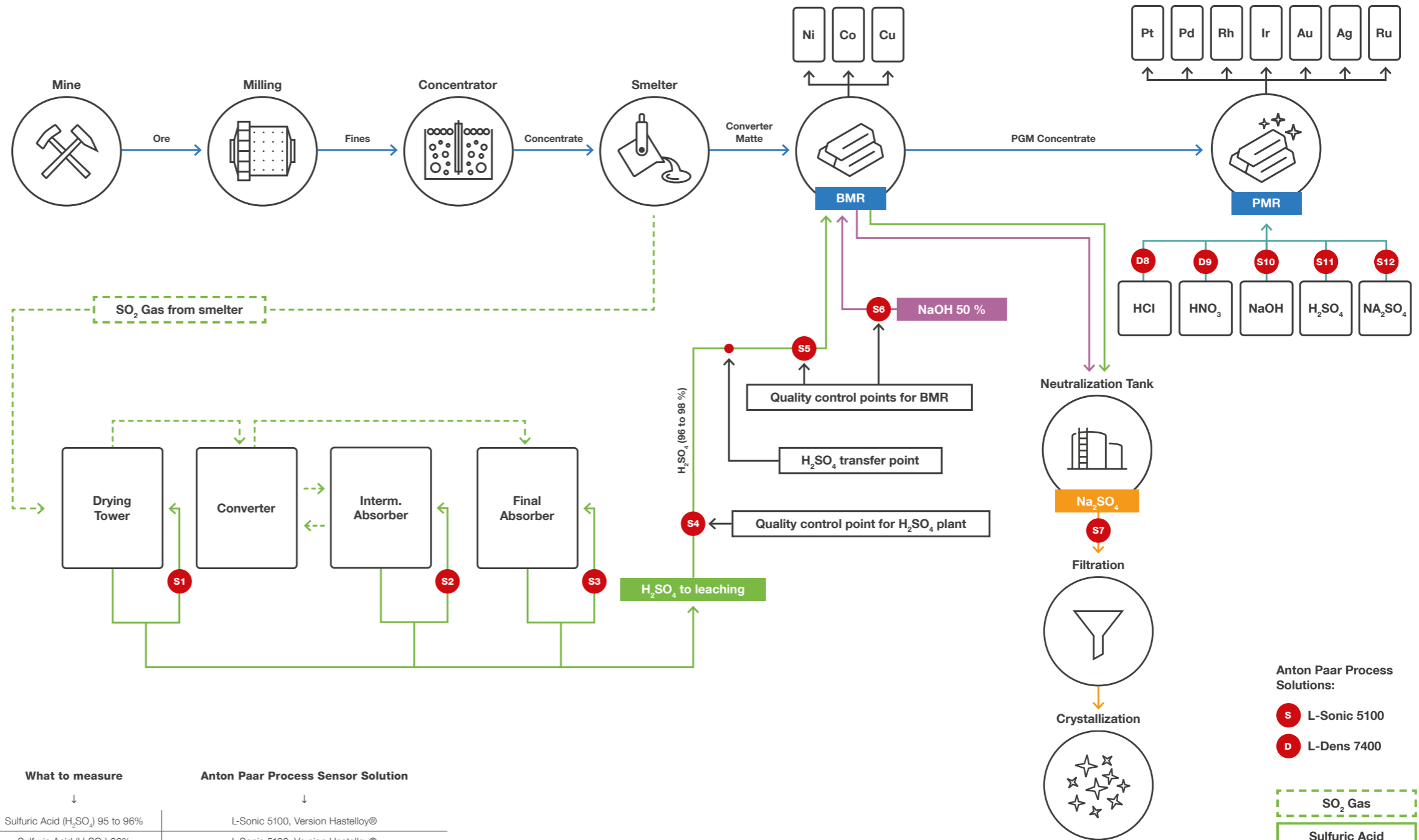


www.anton-paar.com/
apb-mining-overview

Anton Paar's high-tech inline solutions help you optimize production conditions during mining and ore processing. First-class process sensors increase full-process safety, raw material quality, production efficiency and product yield. Monitor your plant in real time, 24/7, 365 days a year with minimal integration effort and maintenance-free.

With Anton Paar's market-proven inline sensor portfolio, cut down on time-consuming, inaccurate laboratory measurements like titration, increase process performance, and ensure constant product quality.

Close the measurement circle by using Anton Paar's established DSA or DMA in your lab for quick reference measurements.



| Inline measurement point | Where to measure | What to measure | Anton Paar Process Sensor Solution |
|--------------------------|--|--|--|
| 1 | Drying tower, sulfuric acid plant | Sulfuric Acid (H ₂ SO ₄) 95 to 96% | L-Sonic 5100, Version Hastelloy® |
| 2 | Intermediate absorber, sulfuric acid plant | Sulfuric Acid (H ₂ SO ₄) 96% | L-Sonic 5100, Version Hastelloy® |
| 3 | Final absorber, sulfuric acid plant | Sulfuric Acid (H ₂ SO ₄) 98 to 99% | L-Sonic 5100, Version Hastelloy® |
| 4 | Feed line, sulfuric acid plant to BMR | Sulfuric Acid (H ₂ SO ₄) 90 to 99% | L-Sonic 5100, Version Hastelloy® |
| 5 | Feed line, sulfuric acid plant to BMR | Sulfuric Acid (H ₂ SO ₄) 90 to 99% | L-Sonic 5100, Version Hastelloy® |
| 6 | Feed line, NaOH to BMR | Caustic Soda (NaOH) | L-Sonic 5100, Version Monel |
| 7 | Neutralization tank | Sodium Sulfate (Na ₂ SO ₄) | L-Sonic 5100, Version SST |
| 8 - 12 | Acid and base feed lines to PMR | HCl, HNO ₃ | L-Dens 7400, Version Tantal |
| | | NaOH, H ₂ SO ₄ , Na ₂ SO ₄ | L-Sonic 5100, Version Hastelloy®, Monel, SST |

Anton Paar Process Solutions:

- S L-Sonic 5100
- D L-Dens 7400

- SO₂ Gas
- Sulfuric Acid
- NaOH
- Na₂SO₄
- PMR Chemicals
- Processed Ore

L-Sonic 5100 Series

Performance through perfection

Anton Paar is a pioneer in inline sound velocity concentration measurement with more than 35 years' experience.

The L-Sonic 5100 inline concentration meter Series is durable, reliable, easy to integrate, and the most accurate choice for inline concentration measurement of H₂SO₄ (80 % to 100 %), as well as NaOH and many more.

It's the number 1 choice worldwide.

Highly accurate, flexible and durable

- Unbeatable accuracy of up to ±0.02 % or better (H₂SO₄, 90 % to 100 %)
- Straightforward integration and operation
- High-tech wetted parts like Hastelloy, Monel, Gold, or Rhodium for the toughest chemical applications
- Maintenance-free "install and forget" sensor
- Flexible pipe or tank installation
- No bypass, pumps, or valves needed for operation
- Different fork lengths available

L-Sonic 5100

| | |
|--|---|
| Wetted parts material | - Stainless Steel 1.4404 (316L) - HASTELLOY® - Monel 400 - 24k Gold-coated - Rhodium-coated |
| Fork length | 125 mm (standard) or customer-specific |
| Process temperature | -25 °C to +125 °C / -13 °F to +257 °F |
| Ambient temperature (for non-Ex versions) | -25 °C to +65 °C / -13 °F to +150 °F -25 °C to +55 °C / -13 °F to +131 °F with Pico -20 °C to +55 °C / -4 °F to +131 °F with Pico and HMI |
| Process pressure absolute | According to flange specifications |
| Recommended flow rate | >0 m/s to 6 m/s (tank and pipe installation possible) |
| Communication | See Pico 3000 |
| Process connections | EN 1092-1 / ANSI B16.5 / JIS B2220 |



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L-Dens 7400 Series

Performance through accuracy

Anton Paar's most powerful inline density meter, the L-Dens 7400 Series, is the result of more than 40 years of in-house engineering excellence. It combines accuracy, a compact design, and flexible installation options, and can be used for inline concentration measurement of H₂SO₄ (0 % to 90 %), as well as HCl and many more.

Accurate, flexible, and easy to get going

- Highly accurate
- Maintenance-free, no consumables
- Minimal integration costs with maximal integration flexibility
- Wetted parts like Tantalum, Incoloy, or Hastelloy for aggressive chemicals
- Easy to commission and operate

L-Dens 7400

| | |
|--|---|
| Wetted parts material | - Stainless steel 1.4404 (316L) - Alloy C-276 - Incoloy 825 - Tantalum |
| U-tube inner diameter | 6.3 mm |
| Accuracy in the adjusted range | 0.1 kg/m ³ / Tantalum: 0.5 kg/m ³ |
| Process temperature | -40 °C to +125 °C / -40 °F to +257 °F |
| Ambient temperature (for non-Ex versions) | -40 °C to +70 °C / -40 °F to +158 °F -40 °C to +70 °C / -40 °F to +158 °F with Pico -20 °C to +60 °C / -4 °F to +140 °F with Pico and HMI |
| Process pressure absolute | Max. 50 bar |
| Recommended flow rate | 100 L/h to 500 L/h |
| Communication | See Pico 3000 |
| Process connections | Adapters for inline, bypass and tank installation with EN 1092-1 / ANSI B16.5 / JIS B2220 |



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Pico 3000

Performance through high-tech

Pico 3000 is Anton Paar's cost-efficient evaluation unit for real-time inline concentration measurement, phase detection and product identification. It can be combined with one of the newest generation of Anton Paar process sensors like the L-Sonic 5100 or the L-Dens 7400.

Due to its compact design, the high-performance transmitter can either be connected directly to an Anton Paar process sensor or mounted separately in a location that is accessible to every operator. From analog output to high-end utilization via fieldbus communication, Pico 3000 can be set up individually to fit into your process.

On-site measurements just got smarter

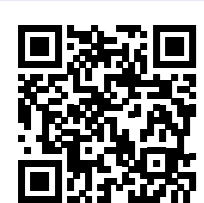
- Smart, space saving, and flexible evaluation unit
- High-performance transmitter for real-time measurement
- Integration into the sensor or as a separate remote-control unit
- Various analog/digital and fieldbus interfaces
- Optional Product Selection Mode: Define up to 32 products
- Free Pico 3000 configuration software

Pico 3000

| | |
|---------------------------------|---|
| Sensor input | L-Dens 7000 series, L-Sonic 5100/6100, L-Com 5500 |
| Interfaces | <ul style="list-style-type: none"> - Analog - Analog/digital - HART - PROFIBUS DP - PROFINET IO - Modbus RTU - Modbus TCP - Ethernet/IP |
| Display (HMI) – optional | 45 mm x 60 mm TFT display incl. five capacitive keys |
| Power supply | DC 24 V ±20 % |
| Degree of protection | IP 66 / 67 / NEMA 4X |



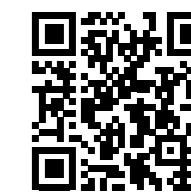
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apb-mining-pico

Reliable. Compliant. Qualified.

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www.anton-paar.com/
service

Our well-trained and certified technicians are ready to keep your instrument running smoothly.



Maximum uptime

Regardless of how intensively you use your instrument, we help you keep your device in perfect shape and safeguard your investment. For at least 10 years after the discontinuation of a device, we'll provide you with any service and spare part that you might need.



Warranty program

We're confident in the high quality of our instruments. That's why we provide a full 3-year warranty. Just make sure to follow the relevant maintenance schedule. You can also extend your instrument's warranty beyond its expiration date.



Short response times

We know that sometimes it's urgent. That's why we provide a response to your inquiry within 24 hours. We give you straightforward help from great people, not from bots.



A global service network

Our large service network for customers spans 86 locations with more than 600 certified service technicians. Wherever you're located, there's always an Anton Paar service technician nearby.

