

**Array-Based Flowmeter, Accurate in the Presence of Magnetite - No Magnetic Field,
Wraps Around the Outside of Pipe, NON-Ultrasonic**

Coal Prep Plants are designed to clean impurities, such as soil, sand and rock from coal, to ready it for transportation to power plants and coking facilities for use in steel processing.

Critical process improvements in coal prep plants can be achieved with the use of accurate and reliable instrumentation, resulting in improved market value of the coal and reduced shipping costs.

Monitoring flow through the coal prep process can be difficult as the coal is abrasive and can cause inaccuracies and maintenance issues for intrusive instruments. CiDRA's *SONARtrac*® Volumetric Flow Meter has been designed specifically for applications like these. The non-intrusive, clamp-on design of the *SONARtrac* system enables slurry flows to be accurately measured without process down time or costly maintenance issues.

The *SONARtrac* system is not affected by magnetite addition, as used in dense media separation, and will not suffer from drifts or offsets that commonly occur with magnetic flow meters. Processing Plants around the world are utilizing the *SONARtrac* Systems to gain process efficiencies and to provide pipeline leak detection on tailings and slurry lines.

Array-Based Flowmeter for Tailings Leak Detection and Cyclone Operation

Sensor Band

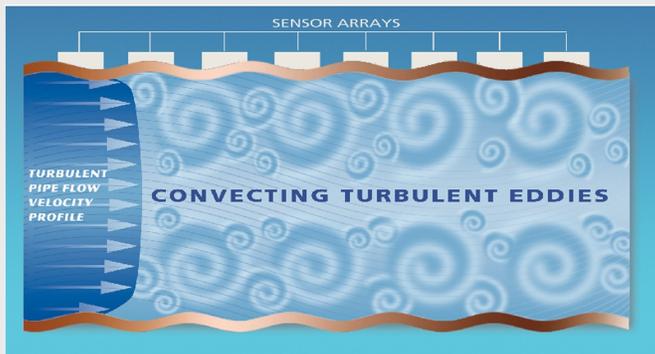


Protective Cover



Volumetric Flow

Tracks and Measures Flow Rate of Naturally Occurring Turbulent Eddies through Wrap-Around Array of Passive Sensors



Accurate, Stable Flow Measurements

Drift-free

Unprecedented leak detection capability

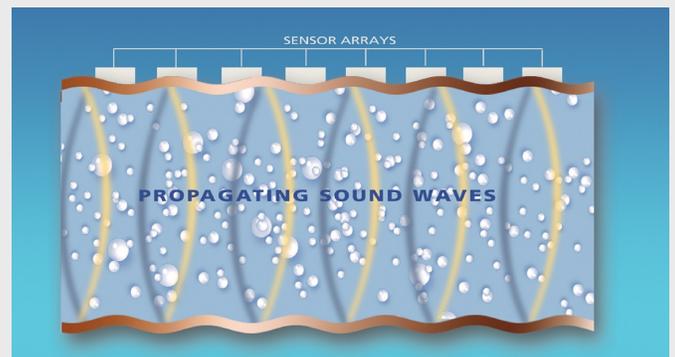
Naturally Immune to Magnetite

No Contact with Fluid

Does not wear out
Maintenance-free

Gas Volume Fraction

Determines Volume of Entrained Air Bubbles via Speed of Sound Measurement (From 0.01% to 20% Entrained Air Levels)



No Contact with Fluid

Does not wear out
Maintenance-free

Nuclear Density Gauge Correction in Presence of Entrained Air

Allows control of specific gravity
Improves mass flow rate calculations

Applications for the SONARtrac® system include:

Coal Slurry
Tailings lines
Cyclone Feed Lines

Magnetite Slurry
Slurry Pipe Lines
Density Measurement Correction