

Optimising mining processes with Tracerco™ Density Measurement Instrumentation

Measure your process with confidence.

Designed for the most challenging environments, Tracerco™ Density Measurement Instrumentation has been installed by mining operators to enhance the efficiency, reliability and productivity in several of their measurement applications. Being able to accurately quantify and report real time data from field operations, in what are often harsh and unforgiving environments, poses a challenge to most conventional measurement technologies. However, Tracerco™ Density Measurement Instrumentation provides reliable, repeatable, cost effective and maintenance free solutions to a number of measurement challenges such as thickeners and clarifiers, slurry feeds, conveyor systems, hoppers, crushers and waste water treatment.

Tracerco™ Density Measurement Instrumentation provides an accurate measurement of fluid or solid density within the process, offering unparalleled performance and market leading reliability. This results in the most efficient and cost effective operating conditions being consistently maintained through the accurate control of the process, chemical additive regulation and the optimisation of solid removal operations.

Housed in 316L stainless steel as a standard, Tracerco™ Density Measurement Instrumentation is highly ruggedised, ensuring that vibrations or dust settling have no impact on its operation. Internal sealing also safeguards the condition of Tracerco™ Density Measurement Instrumentation, even in the event of water ingress.



Tracerco™ Density Measurement Instrumentation monitors and tracks the radiation peak and does not vary with temperature or age related drift. This provides a huge benefit to mining operators in that the instrument only needs to be calibrated if there is a change to the process.

Tracerco™ Density Measurement Instrumentation can be programmed with a self-calibration function which minimises possible errors in fluctuating process conditions (i.e. wear of pipes) to maintain the accuracy of density measurements. For example, if a decision was made to run water down a pipe, Tracerco™ Density Measurement Instrumentation could self-calibrate each time upon contact, again ensuring accurate measurements by eliminating any errors due to pipe wear automatically.

Following a recent improvement initiative, a South American miner commented:

“Tracerco’s system has had a big impact on the efficiency of our aggregate handling systems. We decided on the Tracerco™ Density Measurement Instrumentation mass flow system for one of our

conveyors due to their support and expertise in working with us to engineer a solution to our problem. We now have fully automated feed control using this integrated solution which has de-bottlenecked this part of the process. We have also been able to reallocate maintenance resource that was used on our old system.”

Tracerco™ Density Measurement Instrumentation specification

Performance			
Technology	Scintillator 2" NaI (TI) crystal	Range	up to 45m (147.6 ft)
	Scintillator Plastic PVT (polyvinyl toluene)	Repeatability	±1% typical (application dependent)
Accuracy	±1% Typical (application dependent)		
Electrical characteristics			
Supply voltage	18-27Vdc; 100-240Vac (50–60Hz)	Input	Auxiliary 4-20mA
Power consumption	0.5-28W; model dependent	Output	• 2-wire HART 7, 4-20mA • N/O volt-free contact
Environmental			
Approvals	ATEX, IECEx, CSA & FM	Operating and storage temperature	-54°C to +60°C (-65°F to +140°F); model dependent
Method of protection	Flameproof (Ex db and Ex tb) Explosion Proof (XP)	Compliance	Shock and vibration: ISO 13628- 6:2004 (Q1) 30g shock, 5g vibration EMC: 2014/30/EU, EN61326-1:2013

Benefits:

- Cost-effective measurement data in real-time
- Highly accurate
- No age-related drift
- Outstanding repeatability over a wide range of temperatures
- Non-contact, maintenance free solution
- Extremely robust for use in challenging environments
- Instrument Life Cycle Management (LCM)

Applications:

- Level - hoppers
- Density - slurry and thickeners
- Mass flow - measurement of bulk material on conveyor systems; crushing, mixing and loading