

REAL-TIME DENSITY SENSOR

for tailings dams



PHIBION 
Making tailings safer, smaller and more sustainable

NEXT-GENERATION TAILINGS MONITORING – FULLY AUTOMATED, NO HUMAN INTERVENTION REQUIRED



Why Choose Phibion's RDS?

- 100% remote, no human interaction – No need for manual sampling or in-person measurements
- Real-time data Transmission – Continuous live updates sent directly to your control room
- Advanced calibration for precise density readings across all tailings types
- Seamless integration with existing tailings monitoring systems
- Safer & more efficient – Eliminates the need for personnel exposure to hazardous tailings environments

Managing tailings stability has never been more critical—or more advanced

Phibion's Real-Time Density Sensor (RDS) revolutionises tailings dam monitoring by delivering instant, continuous, and remote density measurements without human interaction

Designed for the world's most demanding mining environments, RDS provides unparalleled accuracy, real-time data transmission, and zero-maintenance operation—empowering operators to mitigate risk, optimise water recovery, and enhance operational efficiency like never before

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TECHNICAL SPECIFICATIONS



| Feature | Phibion RDS |
|--------------------------|--|
| Measurement Type | Real-time tailings density and moisture monitoring |
| Technology | Advanced Radio Waves, Machine learning (AI) |
| Data Transmission | Wireless (LoRa, LTE, Satellite), cloud-connected with instant alerts, continuous streaming, optional seconds or hourly updates |
| Radio Frequency | 400 - 4000 MHz |
| Data Accessibility | Web-based dashboard - Phibion's customer portal |
| Human Interaction | None required – fully automated |
| Installation | Fixed (land-based) or floating deployment on tailings ponds |
| Deployment Method | Mounted on MudMaster, floating platform, or integrated into dam infrastructure |
| Accuracy | >95% |
| Measurement Depth Range | Configurable from 0,5m to 1,5m (adjustable for varying tailings layers) |
| Operating Temperature | 0°C to 60°C (32°F to 140°F) |
| Environmental Protection | IP57-rated for extreme weather and mining conditions |
| Power Source | Power Supply: 12V DC |
| Safety Compliance | Meets ISO, MSHA, OSHA, and environmental mining regulations |
| Alerts & Notifications | Custom thresholds for density, saturation, water recovery optimisation |
| Dimensions | 844mm (L) x 806mm (H) x 320mm (W) weight 16kg |
| Maintenance Requirements | Every six months |
| Autonomous Operation | Seamless integration with autonomous MudMaster operations |
| GPS & Tracking | Real-time location tracking for each deployed sensor |
| Data Export Formats | CSV, JSON |

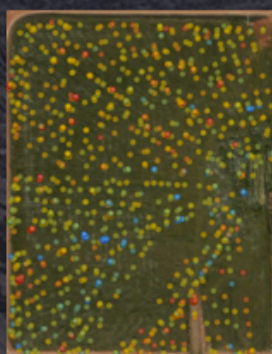
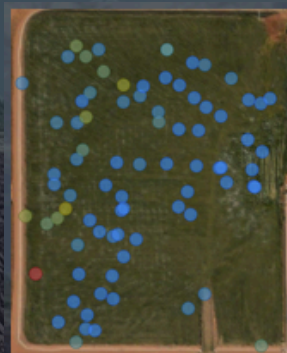
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REAL-TIME DENSITY SENSOR

IN FIELD DENSITY
CALIBRATION



RTD SENSOR



DEPTH

20 cm

50 cm

80 cm

PHIBION'S RDS MATCHES THE ACCURACY OF REAL DENSITY READINGS, DELIVERING REAL-TIME, CONTINUOUS DATA WITHOUT HUMAN INTERVENTION OR ADDITIONAL LABORATORY TESTS

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