

REALology Intelligent Drilling Fluids Monitoring System

Vertechs REALology Intelligent Drilling Fluids Monitoring System (REALologyDR) is an API-compliant, intelligent monitoring system that provides real-time insight into drilling fluid properties. This compact, automated platform delivers continuous data on density, rheology, pH, chlorides, and temperature. With 30,000+ hours of proven performance across 150+ wells, it meets the reliability standards demanded by modern drilling teams for safer, more efficient operations.

The second-generation system delivers enhanced measurement precision and reliability, and introduces an integrated data analysis and control suite. This empowers drilling teams with:

- **Drilling Efficiency Optimization:** real-time parameter monitoring with fluid adjustment recommendations
- **Downhole Condition Modelling:** intelligent simulation of complex downhole environments with actionable response strategies
- **Well Control Risk Mitigation:** operational support and proactive alerts from influx detection through intelligent well control simulation



FEATURES

- **Fluid Compatibility:** supports both water-based (WBM) and oil-based (OBM) drilling fluids
- **Modular Design:** maximum module dimensions: 0.6 × 0.6 × 0.8m, enabling flexible configuration and cost-effective deployment, ideal for confined offshore platforms
- **Automated Operation:** 24/7 unmanned monitoring and control, ensuring consistent measurement reliability
- **Standardized Accuracy:** compliant with API standards, with measurement accuracy verified by an authoritative third-party organization
- **Smart Connectivity:** 5G and IoT-enabled for real-time remote data transmission and control
- **Risk Warning:** analytic engine provides real-time operational risk detection and decision support for optimized well control



Fig 1. REALologyDR modules (left to right: Resistivity Module, pH/Chloride Module, Rheology + Density Module, Funnel Viscosity Module)

SPECIFICATIONS

Version	Fluids	Hardware	Measured Parameters
REALologyDR Standard	WBM+OBM	Density Module Rheology Module	Density Temperature AV, PV, YP, n, K Gel Strength
Optional Add-ons	WBM+OBM	Funnel Viscosity Module pH Module Chloride Module Chloride (low range) Module Calcium Module Iodide Module Bromide Module Resistivity Module ES Module	Funnel Viscosity pH Chlorides Calcium Iodide Bromide Resistivity Emulsion Breaking Voltage

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