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PRECISE

Automated drilling system

APPLICATIONS

- Land drilling operations

BENEFITS

- Offers rapid command response and data acquisition rates
- Improves drilling efficiency and reduces downtime
- Scales and adapts to future demand
- Optimizes multiple operating parameters while drilling
- Increases operational assurance through independent human machine interface (HMI) nodes

FEATURES

- Dedicated programmable logic controllers (PLCs) linked to specific rig functions
- Remote rig and HMI access for data review and technical support
- Secure wireless (driller's cabin and power house) and Ethernet (control system) connectivity
- Ergonomic cyber chair for improved operator ease of use
- Simple, joystick-based controls and easy-to-read touchscreens
- Consolidated cabinet housing all control components
- Advanced camera system for rig surveillance and failure detection
- Two-way voice communication system
- Third-party design integration

OPTIONS

- SOFT TORQUE surface-controlled rotary drilling software plugin

The PRECISE* automated drilling system enables full control and direction of rig functions from a single control source. Engineered to help achieve safer, more efficient, and lower-cost operations with less downtime, the system is configurable to any number of HMIs.

The PRECISE system interfaces with critical rig components using remote I/O installed on the drawworks, topdrive, mud pumps, and drill floor. All controls can be accessed from the driller's cabin through a combination of touchscreens, discrete operators, and simple joystick controls. Additionally, each PRECISE system features an integrated talk-back system to further improve communication reliability at the rigsite.

Add-on feature for slip-stick mitigation

Used in PRECISE system operations, the optional SOFT TORQUE plugin is an easy-to-use and intuitive add-on feature for mitigating stick-slip vibrations while rotary drilling. This plugin provides numerous advantages that enable customers to consistently drill longer and more aggressively

Schlumberger works with every customer to tailor the PRECISE system to their rig and integrate third-party offerings. This close collaboration optimizes performance, efficiency, and safety while maximizing equipment lifespan. Access to experienced technical and service team members is available 24/7 to ensure that drilling operations run as efficiently and safely as possible.

With multiple screens and touch and joystick controls, the PRECISE system enables full control of drilling functions from a single source.

PRECISE

Screen	Functions
Control	View pumping and rotating tools on one screen Control functions of each tool
Drawworks	Set method of control (joystick or pendant) Calibrate position control feature Provide information regarding the drawworks and related electrical equipment, bridge protection, crown saver, cut slip, and maintenance modes Run motor and variable frequency drive (VFD) diagnostics Troubleshoot diagnostics for drawworks-related sensors
Mud pump	Control mud pumps and pressure limit Perform internal BOP (IBOP) pressure testing Sync mud pump Run motor and VFD diagnostics
Top drive	Control top drive Monitor pressure sensors, IBOP, and pipe handler controls Run motor and VFD diagnostics
Tripping	Set traveling assembly speeds Establish visual display of speeds and traveling assembly position Set points (stopping points) for traveling assembly and information about other critical operations
Drilling	Set appropriate set points for autodrilling (WOB, ROP, ΔP, drilling torque) operations Assist in acquiring desired set points with 5-min trend window Display feedback from other drilling-related sensors
Power system	Display power system information Run electrical component, detailed VFD, and dynamic braking diagnostics
Weight indicator	View classic weight indicator display Configure weight indicator scales Command secondary controls to position controls Set up weight indicator features and functions
Maintenance	Run communication diagnostics Access system login (for password-protected functions) Change units of measurement Display detailed description of joystick functions and control assignments
Alarm	Provide current and historical alarms and detailed plug panels

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