

WELL COMPLETIONS | INTELLIGENT COMPLETIONS

Volta™ all-electric control system

All-electric SmartWell® intelligent completion control system for advanced flow control and well management

FEATURES

- All-electric, single-core TEC cabling architecture
- Electro-mechanical actuation with built-in position sensors
- Bidirectional control of zonal production and injection rates
- Advanced condition monitoring
- Integrated pressure and temperature (P/T) gauges

BENEFITS

- Simplified installation, inventory, and logistics to support flexible configurations across multi-zone completions for onsite adaptations
- Near-instantaneous reservoir management with increased resolution for more of choke positions
- Supports proactive zonal control and helps reduce risk by removing the need for complete valve shut-in
- Enables long-term system reliability through proactive or automated zonal control without production interruption
- P/T gauges use real-time digital surveillance and analytics

Overview

The most advanced SmartWell® intelligent completion control system, it uses a single tubing-encapsulated conductor (TEC) line and a smart downhole network to monitor, control, and actuate the entire completion.

The single-core TEC cabling architecture streamlines installation and reduces complexity across multi-zone completions. This reduces capital expenditures (CAPEX) through the elimination of hydraulic infrastructure from the platform and subsea systems. It also enables seamless integration with existing subsea architecture.

The bidirectional choking capability allows dynamic control of zonal production and injection rates. This supports real-time reservoir management and uninterrupted reservoir performance by eliminating the need for complete valve shut-in.

Electromechanical actuation with integrated position sensors, provides precise, high-resolution control of production rates. With configurable set points and near-instantaneous positioning, the system supports active optimization of the reservoir.

Application

Volta™ all-electric control system is compatible with any SmartWell® intelligent completion installation, including subsea, dry tree, extended reach, multi-lateral, and water associated gas applications.

The system has passed testing beyond industry standards and demonstrates reliability. The system helps provide operational flexibility and delivers significant savings in OPEX and CAPEX expenditures, particularly in applications with large step-outs. These savings result from simplified installation, streamlined logistics, and reduced inventory requirements.



HS-ICV
with more than 2,000 installations

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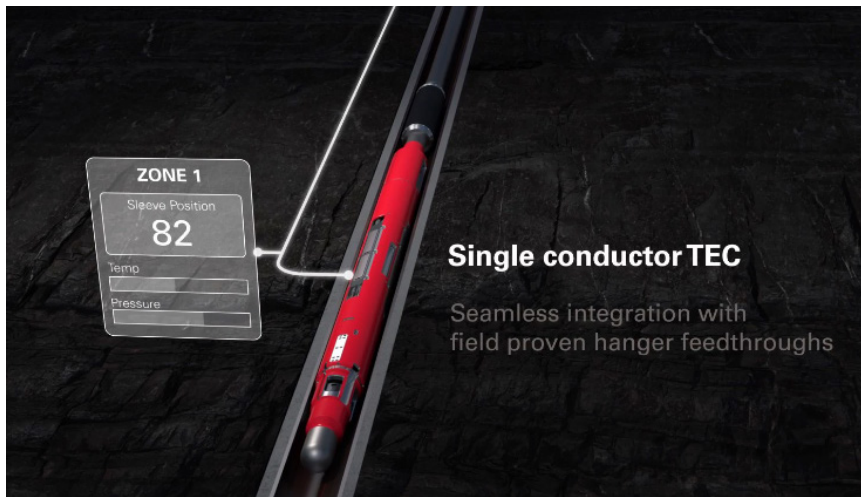
Advanced condition monitoring

Built-in advanced condition monitoring helps support long-term system reliability and well integrity through high-resolution sensor feedback. This feedback allows life-of-well functionality in challenging reservoir conditions.

With the ability to detect early-stage flow assurance issues (e.g., scale or fines deposition) and enable proactive or automated zonal control without interrupting production, the system helps reduce OPEX and intervention risk.

Integrated pressure/ temperature sensors

Powered by the single TEC line, the integrated gauges, based on Halliburton's field-proven permanent monitoring systems, use real-time digital surveillance and analytics to manage water and gas breakthrough at the zonal level. This method reduces production bottlenecks and maximizes hydrocarbon recovery.



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Specifications

- Maximum temperature rating: 135°C
- Minimum temperature rating: 4°C
- Extreme flow rate capable
- Integrated screen option
- High flowing differential capable
- Maximum absolute pressure: 16,500 psi
- Compatible with Fuzion® suite of downhole wet-mate tools
- Available size:
 - > 4 1/2 in.

All-electric technology

Volta™ HS-ICV is a full-bore interval control valve (ICV) engineered on the industry validated HS-ICV platform, with over 2,000 successful field deployments. This ensures operational reliability and performance assurance for reservoir management.

Fully redundant control and actuation options are available to help improve operational reliability and system uptime in harsh and high-risk reservoir environments.

For more information, contact your local Halliburton representative or visit us on the web at www.halliburton.com

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