



PulseEight

Wireless Intelligent Completion for the Digital Oilfield

Unique pressure pulse telemetry enables two-way wireless communication from downhole to surface.

PulseEight intelligent well technology provides a cable-free control and monitoring system for a wide range of applications. Microprocessor driven, the fully-electric system can be programmed to respond to wireless commands from surface, or to react to the well environment e.g. well shut-ins, or changes in pressure or flow rate. Importantly however, each tool has the ability to communicate back to surface with a range of well or tool parameters as required.

The wireless communication uses unique, semi-duplex pressure pulse telemetry, suitable for multiphase fluid environments. Existing wellhead equipment is used to interface with the downhole valve. Eliminating control lines makes PulseEight a simple-to-install, cost-effective solution for oil, water, and gas control in greenfield, brownfield, extended reach, and multi-lateral applications.

PulseEight's unique capability allows for improved surface based evaluation derived from transmitted downhole data or autonomous flow decisions based on in situ analysis helping to deliver a truly intelligent completion.

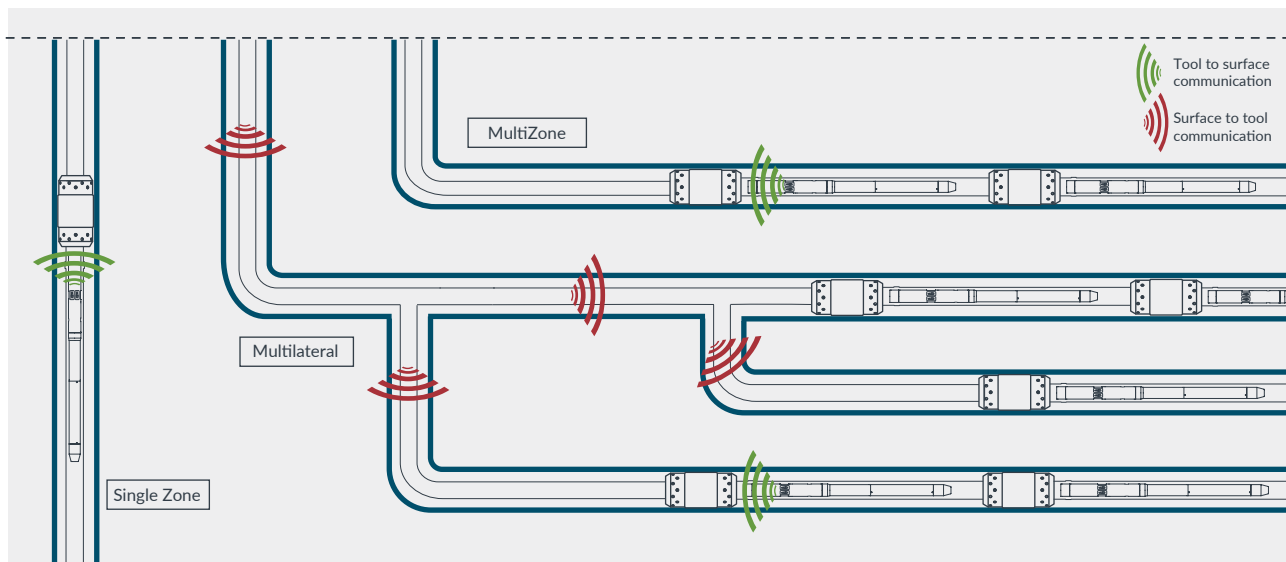
Features

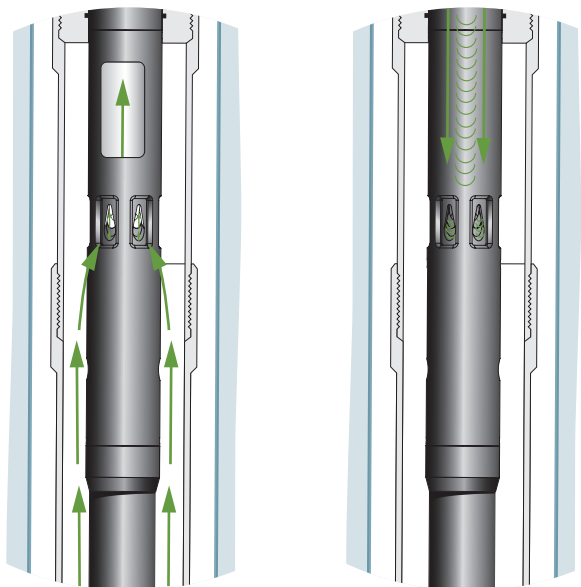
- Unique pressure pulse telemetry removes the need for downhole cables/control lines
- No depth limitations
- No signal boosters required
- Interfaces with existing surface infrastructure
- No additional surface kit required
- Infinitely variable choke for optimal production
- Tool intelligence providing infinite variability

Benefits

- Simplifies completion operations reducing rig time
- Reduces system costs by eliminating control lines
- Improves barrier integrity through removal of feed-through connections, minimising downtime
- Enables intelligent completion solutions in existing wells, without a workover
- Provides interval control without intervention
- Improved HSE

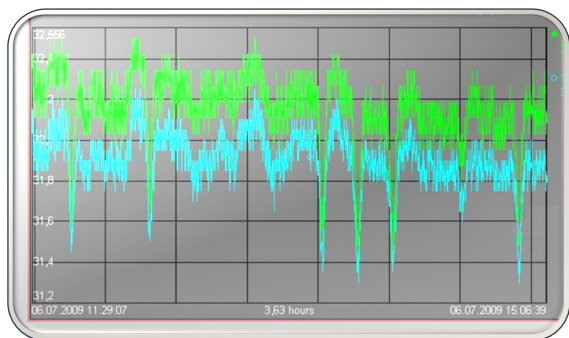
Example Completions





During normal production, flow of fluid or gas enters via the ports in the tool and flows to surface. Whilst communicating, the device creates a downhole pressure response by briefly choking the flow, which can be viewed at surface as pressure pulses (tool telegrams).

These telegrams are collated on the surface acquisition system which can then be interpreted utilising PulseEight's proprietary software. The amplitude, duration and time between the pulses is converted to a unique binary code that can provide a range of tool and well information.



To communicate from the surface to a PulseEight device, a unique set of pulses are created at the wellhead via manipulation of the surface choke. Each device responds to a unique pulse sequence and takes appropriate action such as opening, closing or choking, in addition to amending any programmed variable.

Applications

Below are just some of the applications for PulseEight:

- Pressure/temperature monitoring
- Interval control
- Multi-lateral well control
- Water and gas shut-off / control
- Remote Barrier for multi-stage frac applications
- Autonomous gas-lift optimisation
- Gas hydrate prevention
- Formation integrity assurance
- Ambient valve replacement
- Cross-flow prevention

Technical Specification

OD Range	2.50" - 5.00"
Max Rate	30,000BPD
Max Length	30.30ft
Body Pressure	10,000psi
Rating Static Seal Rating	5000psi
Unloading Seal	1500psi
Rating	150°C/302°F
Max Design Temperature	110°C/230°F <small>*Qualified limit, can review on application basis</small>
Max Operating Temperature* Lifetime	Up to 5 years

