

COMPLETIONS SOLUTIONS | SUBSURFACE SAFETY VALVES

FEATURES

- All-electric actuation
- Mechanical failsafe closed – independent of external power source
- Depth insensitive
- Fully independent and redundant actuation and control systems

BENEFITS

- Compatible with Halliburton All-Electric portfolio sensors and flow controls
- Complete isolation from wellbore fluid eliminates risk of gas and or fluid ingress into the valve actuation mechanism
- Operates under IWIS medium power standards
- Permanent real-time health monitoring
- Reduces potential environmental impact caused by loss or spills of control fluid over the long-term field life

EcoStar® Electric Tubing-Retrievable Safety Valve

Safety valve for all-electric systems

**Overview**

The Halliburton EcoStar® valve is the world's first electric tubing-retrievable safety valve (eTRSV) and was the first installed in 2016. The EcoStar eTRSV solves a 30-year industry challenge to remove hydraulic actuation and its limitations.

This breakthrough in electric actuation is made possible through a unique magnetic coupling mechanism between the actuator and the safety valve. The design and construction of the valve creates a chamber for the downhole electronics and electric actuator outside of the wellbore.

This enables a fully electric completion system with zero risk of exposing electronics to produced wellbore fluids and the added benefit of serving as a conventional safety valve with the same trusted failsafe mechanisms.

HOW THE ECOSTAR eTRSV WORKS

The actuating piston (linear actuator) of the EcoStar eTRSV is connected to the outer sleeve of the magnetic coupler located in an isolated chamber of the eTRSV outside of the wellbore. The inner sleeve of the magnetic coupler is incorporated into the flow tube within the wellbore of the eTRSV. Separating and isolating the inner and outer sleeves of the magnetic coupler is a pressure-containing housing made of a nonmagnetic metallic tubular material.



When an electrical command is sent to the eTRSV, the actuator acts on the inner sleeve, which in turn shifts the outer sleeve via the magnetic coupler. This motion of the outer sleeve translates to the flow tube within the wellbore, which opens the safety valve flapper and places the eTRSV into well production mode. With the release of electrical power on the actuator system, either intentionally or in an emergency condition, the mechanical spring automatically returns the eTRSV to the failsafe closed position.

Technical Specifications Summary

- 5.5-in. ID 4.562-in., OD 8.62-in.
- Working pressure: 10,000 psi (5.5-in.)
- Temperature: 4 to 125°C
- Non self-equalizing
- Power requirement: <96W, IWIS medium power
- IWIS medium power compatible (API 17F)
- Position sensor feedback
- Temperature sensing
- Real-time health monitoring



EcoStar® eTRSV

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

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