ROCS Umbilical-less Control System

INDUSTRY-FIRST COMPLETION LANDING CONTROL WITHOUT AN UMBILICAL

OVERVIEW

Halliburton in alliance with Optime Subsea ASA, delivers the ROCS, Remotely Operated Control System, a first-of-its-kind subsea control system. The ROCS electrohydraulic control system was developed with industry-proven components that provide robust and flexible completion landing string solutions. During subsea completion operations the system allows the user to function the tubing hanger running tool and the upper completion while actively monitoring downhole pressure and temperature gauges. The ROCS utilizes smart, redundant electronic controls, multiple downhole pumps, and redundant battery supplies to perform all functions of a traditional Completion Landing String without the operational complications and risk associated with an in-riser umbilical.

ROCS removes the need for reelers, control umbilicals and hydraulic pressure units (HPU) which drives increased operational safety and efficiency, reduced rig footprint, and smaller crew size for offshore completion and intervention operations. The in-riser ROCS module is remotely controlled topside using an advanced telemetry control unit in conjunction with Halliburton's DynaLink® Wireless Acoustic Telemetry System. ROCS provides improved digital functionality through a custom Human Machine Interface (HMI), without the use of traditional surface controls. Let ROCS bring increased safety and efficiency to your offshore operations.

FEATURES

- Umbilical-less Completion Landing String solution
- Delivers previously unknown trip speeds
- Removes traditional umbilical and HPU
- Integrates with 10K or 15K equipment
- Directly controls of Tubing Hanger Running Tool (THRT) and upper completion functions
- Full redundant electrical controls and batteries
- Monitors pressure and volumes on each hydraulic function Monitors Permanent Downhole Gauges (PDG)
- Compact reconfigurable design
- Designed per ISO 13628-7, NORSOK

BENEFITS

- Highest efficiency Completion Landing String solutions
- Digitize your completion installation
- Minimizes operations HSE risk
- Limited topside footprint
- Eliminates mobilization of Tons of equipment
- Modular design enables adaptability to customer-specific requirements
- Short length equates to reduced rig-up time and ease of handling
- Built on field-proven technology platform with qualified components
- Integrated sub-surface flow meters enable redundant diagnostic capability and help reduce uncertainty with Tubing Hanger operations
- Real-time, design-of-service, digital validation testing
- Shorter operations decreases waiting-on-weather risk

ROCS control module specifications

Applicable Standards	API STD 17G	Design and Manufacture of Subsea Well Intervention Equipment	Design and Quality Assurance
Operating Limits			
	Maximum Working Pressure psi (bar)	10,000 (690)	15,000 psi (1,034 bar)
	Maximum Test Pressure psi (bar)	15,000 (1,034)	22,500 psi (1,551 bar)
	Maximum Control Output Pressure psi (bar)	10,000 (862)	15,000 psi (1,034 bar)
	Service Temperature, °F (°C)	35 to 250°F (2 to 121°C)	35 to 250°F (2 to 121°C)
	Service	NACE Sour Service	NACE Sour Service
Physicals			
	Bore in (cm)	5.875 (14.9)	6.000 (15.2)
	Overall Length in (cm)	21.3 (6.5)	21.3 (6.5)
	Major Diameter in (cm)	18.25 (46.4)	18.25 (46.4)
	End Connections	10-3/8 in. 3 TPI Stub Acme Box	9-in. 4 TPI Stub Acme Box
	Approximate Weight lb (kg)	6,614 (3,000)	6,614 (3,000)

Notes:

- These ratings are guidelines only. Refer to the equipment data book for individual equipment specifications.
- The values of tensile, burst, and collapse strength are calculated with new tool conditions,
- Lamé's formulas with Von Mises' distortion energy theory for burst and collapse strength, and stress area calculations for tensile strength.
- These specifications meet NACE MR0175 requirements for all temperatures.
- These ratings are guidelines only. Refer to the equipment data book for individual equipment specifications.

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