Product Definition

Frames Intervention Workover Control Systems provide the hydraulic power, monitoring and control facilities to enable installation and intervention of subsea Xmas tree systems without impacting other wells.

Product Description

The basic architecture of a Frames Workover Control System comprises a control room section within a positive pressure-certified container, as well as a HPU section suitable for use in hazardous areas. Hydraulic power for the subsea operations is generated by the HPU section, and is delivered together with electrical power and signals through umbilicals connected to the subsea equipment.

Frames systems ensure that the operations carried out do not impact the overall safety of the field. Furthermore, our systems provide all the necessary interconnections to allow the equipment to be installed on the drilling and intervention vessels without further installation work. Our enclosures can be supplied either in carbon steel or in AISI 316 material.

Frames units are designed to comply with international standards such as:
- ISO 13628 - Design and operation of subsea production systems
- IEC61508 and IEC61511 - Safety systems
- DNV 2.7.1 - Design standard for offshore containers
Process Description

An Intervention and Workover Control System (IWOCS) controls and monitors the deployment, operation and retrieval of subsea production equipment such as tubing hangers, landing strings and Xmas trees. It also offers facilities for down-hole operations, well testing and production testing. Workover equipment is standardized and can be customized to field and customer requirements.

A Frames IWOCS unit typically consists of different sub-assemblies, which can be either integrated in one container or divided in multiple containers.
- Control room / Master Control station
- Hydraulic power unit
- Accumulator rack
- Booster package

Frames IWOCSs support different operational modes for various operations on subsea wells.

The HPU interfaces with the Master Control Station for the following operations/tasks:
- Operation of distribution valves and choke
- Performance of shutdown sequences
- Pump start/stop
- Alarms
- Pressure monitoring
- Flow monitoring
- Reservoir monitoring
- Air-supply monitoring

The HPU typically has the footprint of a standard 20’ container. This allows for standardization of the plot space on the drilling rig. The HPU operates in several modes: local manual, local automatic and remote automatic.
Project Management

At Frames, we understand that success depends on sharp project management. As our client, we are driven to support your business, with our dedicated project team always on hand for one-on-one contact, providing you with the best possible service.

From concept through to design, production, testing and delivery, our project team will know your operating environment, and will use the latest technology to precisely meet your needs.

We are solution-oriented, understand your industry and always use strict document control and professional planning to exercise tight process control and meet all delivery deadlines. Our global office network, international supply chain and partnerships with leading vendors mean we are always able to supply the best possible systems and meet all of the local requirements and regulations.

Technical Details

- Hydraulic pressure: up to 20,000 psi
- Hydraulic fluid: water/glycol
- Pumps: air-operated or electrically driven
- PLC-based local control panel
- Container size: 20'-40' standard size, according to DNV 2.7-1 and A60
- HVAC or pressurized Exp enclosure
- Airlock
- Power supply based upon client specifications
- UPS battery selection based upon client specifications
- Suitable for use in hazardous areas

Added Value Frames

- Multidisciplinary approach
- Interface engineering
- System-integrated total solution
- Integrated factory acceptance capabilities
- 24/7 worldwide service, start-up and after-sales support

Contact

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Frames Family Tree

Onshore

Oil & Water
- Multiphase Separation
  - Production Separators (High & Low Pressure)
  - Test Separator
  - Degasser & Knock-Out Drum
  - Water Oil Separator (WOSEP)
- Compact Inline Separation
  - SwirlSep
- Electrostatic Coalescers
  - Dehydrator
  - Desalter
- Produced Water Treatment
  - Deoiling & Desanding
  - Hydrocyclones
  - Gas Floatation
  - Media Filtration
  - Solids Removal & Cleaning
  - Stripping
- Separation Internals
- Heat Exchangers

Gas
- Gas Separation
  - Demisting
  - Scrubbers
  - Filters
  - SwirlSep
- Heat Exchangers
  - Shell & Tube Heat Exchangers
- Air-Cooled Coolers

Gas Sweetening (H₂S & CO₂)
- Amines
- Thiopaq O&G
- Solid Bed Scavenger
- Membrane
- Molecular Sieve

Gas Dehydration
- Glycol (TEG)
- Molecular Sieve

Dew Point Control
- Low Temperature Separation (LTS)
- Solid Desiccant

Hydrate Inhibition
- MEG/DEG Recovery
- Methanol Recovery
- MEG/DEG Desalination

Light Hydrocarbon Recovery
- Condensate Stabilization
- Fractionation

Fuel Gas Treatment

Gas & Safety Control
- Wellhead Control
- Subsea Hydraulic Power Units
- Hydraulic Power Units
- IWOCS (Intervention Workover Control Systems)
- TUTU (Topside Umbilical Termination Unit)
- Cargo Ballasting Systems

Safety Instrumented Systems
- High Integrity Protection Systems (HIPS)

Chemical Injection
- Chemical & Methanol Injection Systems
- Chemical Distribution Systems
- Seawater Electrochlorination Systems

Valve Automation Center
- Actuators and Actuated Valve Packages
- Control Systems

Automation
- Buoy Control
- Tank Farm Control & Safeguarding

Offshore

Flow Control & Safeguarding

 floaters

Integrated Solutions

Total Plant Solutions
- Industrial CO₂ Modules
- Early Production Facilities
- Wellsite Packages
- Biogas

Services

Asset Life Cycle Management
Maintenance & Field Services
Commissioning
Spare Parts
Operator Training
Engineering Studies
- Conceptual
- FEED and Basic

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