Oil & Gas Solutions

Exceptional Performance and Value
Today’s petroleum companies are encountering unprecedented challenges to improve ROI while staying on schedule and within budget. Changing market conditions escalate the need for sustainable operations to help you reach operational excellence.

A key component that has helped companies like yours achieve this is technology – information and automation is at the heart of all processes.

It is in those technological areas where Rockwell Automation has accumulated extensive experience in the oil and gas industry over the last 50 years giving us a keen appreciation of your issues and an in-depth understanding of the tools you need to address them.
INNOVATION  Increase your return on assets using cutting-edge technologies and solutions

PROJECT EXCELLENCE  Providing you low total cost solutions through a large team of specialists and technologies

SUSTAINABLE OPERATIONS  Enhance safety, reliability and support environmental stewardship
DRILLING
As operational costs rise, any delay in drilling can quickly bleed profits. Rockwell Automation drill rig automation solutions can help you increase your return on assets using exceptional performance and value through innovation, project excellence and sustainable operations.

APPLICATIONS/PROCESSES:
» Rig Ops Centre
» Top Drive Control
» Mud Pumps
» Draw Works
» Torque Wrench
» Propulsion Control
» BOP

CASE-IN-POINT
Asset Performance Management
Easily collect information from your assets using Rockwell Automation’s scalable Asset Performance Management solution using Integrated Architecture. This allows you to collect and monitor your information to make educated decisions based on real-time information. With these technologies, you can focus on getting to your first oil faster than before.

SUBSEA
Subsea production offers a cost effective alternative to platform-based facilities, particularly for the exploration of remote or deepwater fields. However, a production system operating remotely on the seabed creates new challenges: along with the strong currents, uneven seafloors and sub-zero temperatures, the sheer depth at which the system must operate makes regular maintenance a challenge.

APPLICATIONS/PROCESSES:
» Compressor Control
» Wellhead Monitoring
» Safety Systems
» Manifolding
» Pump Control
» HPU (Hydraulic Power Unit Control)
» HIPPS

CASE-IN-POINT
Subsea Control
As subsea compressor control demands continuous availability and reliability, our solutions meet the demands with its distributed architecture and robust features. Its compact size allows it to be packaged to withstand low temperatures, typically between 3-4 degrees C, and harsh conditions. This solution offers continuous availability through technology that helps production continually run safely and reduces unplanned maintenance.

OFFSHORE PRODUCTION
Harsh conditions, space limitations, safety concerns and reliability present distinct offshore challenges. These issues along with an industry moving towards the Normally Unmanned Installation (NUI) all must be taken into consideration when designing and upgrading systems. Rockwell Automation’s Integrated Control and Safety solutions offer tremendous value to offshore installations, greatly reducing capital costs, installation and commissioning effort and on-going operational costs.

APPLICATIONS/PROCESSES:
» Wellhead Platforms
» Separation (Oil, Gas & Water)
» Production Metering (Oil, Gas & Water)
» Natural Gas Liquids
» Extraction/Processing
» Crude Heating
» Crude Pumping
» Gas Compression
» Water Treatment
» Water/Gas Injection
» Process Safety
» Power Generation
» Vessel Positioning/Management
» Mooring and Ballast Control

CASE-IN-POINT
Intelligent Motor Control
Process control integrated with intelligent motor control helps you improve overall control, communications and protection of your assets. Ideal for platforms, the space and weight saving of the Direct-to-Drive™ Medium Voltage technology eliminates the need for an isolation transformer and mitigates common mode voltage. Rockwell Automation also offers technologies that can help protect your personnel from hazardous arc flash energy and keep your processes running longer through remotely monitoring, troubleshooting and configuring your rotating assets from any location.
ONSHORE PRODUCTION
Today’s energy needs are increasing demand for both traditional and non-traditional sources. Rockwell Automation has a long track record of providing solutions for onshore fields as well as industry expertise in non-traditional sources, including: Oil Sands, Extra Heavy Crude, and Coal Bed Methane.

APPLICATIONS/PROCESSES:
» Wellhead
» Separation (Oil, Gas & Water)
» Metering (Oil, Gas & Water)
» Natural Gas Liquids Extraction
» Crude Heating
» Crude Pumping
» Gas Compression
» Water Treatment
» Water/Gas/Steam Injection

CASE-IN-POINT
Process Automation System
Onshore production is comprised of various systems that are located over a large geographical area. Integrating these systems together becomes easier when using a plant wide automation system that exceeds typical control and safety functionality which drives maximised productivity and improves reliability while reducing cost. This infrastructure enables you to implement a lower total lifecycle cost, achieve sustainable operations and reduce maintenance costs for exceptional performance and value.

TRANSPORTATION
With increasing worldwide energy demands you are encountering unprecedented challenges to improve efficiency while maintaining profitability. From increased safety and environmental considerations to increased complexity in operations Rockwell Automation’s expertise and innovation can help you meet these challenges.

APPLICATIONS/PROCESSES:
» Metering and Custody Transfer
» Pump Stations
» Compressor Stations
» Segmenting/Block Valves
» LNG

CASE-IN-POINT
Condition Monitoring
Increase efficiency by ensuring that your assets are working at their maximum efficiency. By leveraging multiple technologies including vibration monitoring, thermography, motor circuit evaluation, lubrication and process analysis to enable a proactive approach to maintenance. Rockwell Automation’s condition monitoring solutions integrated with the process control system in an integrated structure gives greater insight into plant operations. By matching control with condition monitoring, getting to the root of information and issues helps you to optimise scheduling of downtime, labour and materials so you can increase productivity while reducing costs.

PROCESSING
Safety, reliability and sustainable operations are at the forefront of your thoughts every day. Using Rockwell Automation’s broad portfolio of process and safety solutions can help you reach your operational excellence through innovative technologies.

APPLICATIONS/PROCESSES:
» Refining Processes
» Gas Fractionation Plants
» Power Generation
» Steam Generation
» Storage
» Oil/Products Movement
» Water Treatment
» Lube Plants
» Terminal Management
» Metering/Custody Transfer
» Process Safety
» Pump Stations
» Compressor Stations

CASE-IN-POINT
Process Control
Keeping processing facilities up and running around the clock can be a daunting challenge, especially when many facilities have high utilisation. Using an Integrated Control and Safety System with a wide variety of high reliability, high availability solutions can help you integrate a single plant wide automation solution that exceeds typical control and safety functionality. Our process automation solution provides you with the level of control, availability and reliability you need to run an efficient, profitable plant. From field devices through the control and safety aspect all the way to business integration systems, we can design a total solution that helps you get the most out of your individual plant.

For more information on Rockwell Automation’s experience, technologies and solutions for Oil and Gas applications, please visit us at www.rockwellautomation.com/industries/oilgas
As an automation leader, Rockwell Automation has accumulated extensive experience in the oil and gas industry, giving us a keen appreciation of your issues and an in-depth understanding of the tools you need to address them. Utilise Exceptional Performance and Value through these solutions:

**ADVANCED PROCESS CONTROL AND PREDICTIVE CONTROL**
» Optimise throughput, yield and energy usage  
» Optimise asset utilisation  
» Reduce emissions

**DIGITAL COMMUNICATIONS TO INTELLIGENT FIELD DEVICES**
» FOUNDATION Fieldbus, Profibus PA, HART, DeviceNet™ Connectivity  
» Predictive diagnostics for increased process availability  
» Reduce installation and maintenance costs  
» Reduce project risk through faster start ups

**DATA MANAGEMENT AND HISTORIAN**
» Event and time based condition playback  
» Sequence of events recording  
» Increase production visibility

**ASSET PERFORMANCE MANAGEMENT**
» Comprehensive asset information from components to process systems  
» Improve system reliability  
» Reduce maintenance cost  
» Avoidance of abnormal situations
POWER AND ENERGY MANAGEMENT
» Control and balance energy to realise savings
» Improve energy reliability

CONDITION MONITORING
» Multiple reliability solutions for optimising productivity
» Predictive maintenance systems to reduce downtime

INTELLIGENT MOTOR CONTROL
» Lower installation expenses
» Advanced diagnostics to help reduce plant downtime
» Low and medium voltage solutions
» Direct to drive solutions
» Packaged power to reduce startup time and costs

TURBO MACHINERY CONTROL
» Turbo machinery control
» Compressor and turbine control for improved performance
» Load sharing optimisation
» Gas Turbines
» Compressors
» Generators
» Pumps

SAFETY AND CRITICAL CONTROL
» Fault tolerance; simplex to TMR
» Scaleable safety integrity: TUV rated SIL 1 to 3
» Fail-safe design and operation
» Scaleable from small quantity I/O to large systems
» Truly distributed architecture
» Functional safety leadership
» Hazardous area control solutions
» Motor control arc flash solutions to enhance electrical safety

EXCEPTIONAL PERFORMANCE AND VALUE
CONSULTING
» Conceptual design (greenfield/brownfield)
» Development of P&IDs/PFDs/UFDs
» Functional safety management
» Alarm rationalisation management
» Site surveys and obsolescence studies
» Implementation strategy and planning
» Package equipment control schemes
» Compression, power generation

ENGINEERING DESIGN SERVICES
» Turnkey project management
» Control and safety philosophy development
» Functional design specifications
» Control narratives and logic diagrams
» Site and offshore work-pack preparation
» Field instrumentation specification and engineering
» Installation management

FUNCTIONAL SAFETY MANAGEMENT
» Risk assessments
» HAZOP/HAZAN studies
» Development of ESD shutdown hierarchies
» ESD cause and effect safety analysis and functional evaluation (SAFE)
» Fire and gas detection philosophies
» Detailed control and safety system design
» System commissioning
» SIL analysis and SIL targeting

SUPPORT SERVICES
» Emergency call out support
» Spare parts management
» Maintenance management and planning
» Close out and as built documentation
» Safety training
» Safety system integrity testing

STANDARD SOLUTIONS
» Blowout preventers
» HIPPS
» NULs
» Compressor control and anti surge
» Burner management systems
» Pipeline valve stations

EPCM SERVICES
» Turnkey project management and solution supply
» Third party equipment procurement
» Installation management
» System commissioning
» Single point of responsibility

Rockwell Automation's dedicated global team of oil and gas professionals provides full lifecycle services for power, automation and safety systems from consulting through ongoing support. Our team has hundreds of years of combined experience in the oil and gas industry. Many of our engineers are actively involved with standards organisations leading best practices for the industry.

Our customers can leverage the talents of our certified program and project management professionals as well as our robust design methodologies and engineering tools. We offer repeatable and consistent project execution that keeps projects on time and reduces the overall lifecycle costs.