SCADA & REMOTE TERMINAL UNIT SOLUTIONS

OIL & GAS AND WATER WASTEWATER APPLICATIONS
SCADA HMI SOFTWARE

System Overview, Trends, Alarms, Reports, Historical Data

RSView SCADA HMI system from Rockwell Software provides the ability to:

- View facility-wide operationally-centric data
- Capture, store and retrieve critical operational data with operator notes
- View Trend data in real-time from “live” data or historical sources
- Provide high system availability and data integrity
- Preemptive critical alarm notification of operations and maintenance staff via text or voice paging system
- Produce operational and regulatory report on regular intervals
- Provide system-wide administration of security and log-on rights

COMMUNICATION MEDIA

Lease line modems, radio modems, cellular modems, frame relay, satellite, and microwave are all means of connecting RTUs to a central SCADA HMI system. Rockwell Automation RTUs connect to many Third Party devices to build a complete SCADA system. Rockwell Automation maintains a list of quality communication technology partners in our Encompass Partnering program. We have partnerships with some of the top names in the industry.
Whether describing Oil and Gas or Water Wastewater industries, today’s focus on the bottom line and reducing costs put Operators and Engineers under constant pressure to find ways to maximize efficiency.

As an Oil or Gas production or transportation company, you are under constant pressure to maximize production, meet increasingly demanding delivery schedules and reduce operating and maintenance costs while ensuring compliance with environmental regulations and secure operation.

As a Water Wastewater Supervisor, you are expected to ensure public health, protect your local environment, operate your system within budgetary constraints, and provide secure, uninterruptible wastewater collection and water distribution service to your customers.

With increasing government regulations, increasing output and heighten security awareness, many have seen the need to install or upgrade Supervisory Control and Data Acquisition (SCADA) systems. The function of a SCADA system is to monitor, operate and control remote systems that are located over a large geographic area from a central location. Remote monitoring and control can provide data that can be used to significantly enhance operation efficiencies, reduce downtime, and increase security and counterterrorism measures. Other benefits of remote monitoring include better regulatory record keeping and reporting, remote trouble shooting to reduce downtime and increase repair efficiency, reduce time and travel labor cost, and improved capability to instantly alert operators of alarms and undesirable events.

Rockwell Automation is a leader in providing high quality, off-the-shelf, hardware and software SCADA solutions for the water and wastewater and Oil & Gas industries. Built with open communication protocols like Ethernet, DF1, and Modbus and support for the most used SCADA protocols like DNP, BSAP and others, our PLC-based Remote Terminal Units (RTUs) offer multiple topology configurations:

- Point to Point
- Point to Multi-point
- Report by Exception
- Broadcast
- Store and Forward

and are supportable by your maintenance staff or local systems integrator using ladder logic programming language. Visualizing and maintaining your system, and informing your operators from a central location is made easy with our RSView SCADA software which comes with I/O drivers to connect to Allen-Bradley RTUs as well as most 3rd party RTUs. A SCADA system built with Rockwell Automation hardware and software offers you the best value, scalable solution, that can be expanded and upgraded over time translating into lower long-term risk for your facility.
LIFT STATIONS
Collections systems rely on a series of lift stations and combined sewer overflow (CSO) stations communicating to a central location to prevent sewerage back-ups and protect the environment.

WATER BOOSTER STATIONS
Booster pump stations for fresh water systems operate by maintaining system pressure or matching water flow demand.
OIL AND GAS WELLS

There are two main types of wells: Natural Flow and Artificial Lift wells. Monitoring and remote control requirements depend on the type of well. For natural flow wells, surface process variables like flowing/casing pressure and temperatures and the position of the flowing valve need to be monitored and gas wells include compensated flow calculations. Remote control is limited to the shutdown valve. For artificial lift wells, additional monitoring and control is required to be able to supervise motor or gas lift valves and be able to control those devices.

COMPRESSOR STATIONS

Compressor Stations are responsible in pipeline systems for maintaining the appropriate pressure levels needed to deliver gas at the destination locations. Multiple compressor stations are typically needed in a gas pipeline and the communication to a central location is key to ensure coordination and safety of the operation.

VALVE STATIONS

An important element in the safe operation of a gas or liquid pipeline is the block or segmenting valves. These valves are mainly responsible for shutting down segments of the pipeline to isolate leaks or ruptures. Local and remote control capabilities as well as data acquisition functions to be able to collect process information along the pipeline (Pressure, temperature, flow and valve position) are the main requirements of this application.

PUMP STATIONS

Operate by maintaining system pressure or matching flow demand. Multiple pump stations connected to the pipeline and communicating back to a central location are used to deliver crude oil or products to refineries and terminals.
The RTU stations require robust controllers that are compact and efficient. Rockwell Automation’s Micrologix and CompactLogix families of PLCs are well suited for these applications that require proven reliability and tend to use a minimal amount of I/O.

The Master Station calls for controllers that are scalable and are information enabled. Rockwell Automation’s family of ControlLogix controllers are part of Rockwell Automation’s Integrated Architecture. This family of Programmable Automation Controllers combine the technology advantages of PCs with the security and reliability of PLCs. The Logix controllers offer the best of both worlds and can easily meet growing information management, supply chain integration and regulatory demands.

### Controller-based Master Station Comparison

<table>
<thead>
<tr>
<th>Controller</th>
<th>MicroLogix</th>
<th>SLC</th>
<th>PLC-5</th>
<th>CompactLogix</th>
<th>FlexLogix</th>
<th>ControlLogix</th>
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<tr>
<td>Specification</td>
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<td>1500 LRP</td>
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</table>

For more detailed information contact your local Rockwell Automation representative.

### INFORMATION SOLUTIONS

Transforming producing operations into strategic assets and increasing operational flexibility in a global economy requires information.

Combining the Allen-Bradley’s information enabled control platform, with Rockwell Software’s suite of solutions, provides cost-effective solutions for your operational information needs.

The wide portfolio of software modules include:

- **RSSQL** – helps you better manage your manufacturing processes by integrating the valuable data in your shop floor control systems with enterprise IT and other manufacturing applications.
- **RSMACC** – helps you centrally maintain enterprise-wide network assets and audit/log changes to controllers and other automation devices.
- **RSBizWare Historian** – tracks process variability by analyzing a wide variety of process and production data such as temperatures, pressures, and flow rates.

www.rockwellautomation.com