Maximize Gate Station Uptime and Safety by Gaining Real-time Operational Visibility

Background

As the primary handoff location between natural gas transmission and distribution companies, gate stations are a critical point in industrial, commercial and residential natural gas supply. Serving multiple purposes of pressure reduction, accurate measurement and transaction recording, and odorant introduction for gas leak detection, gate stations have demanding monitoring and control requirements. Improper operation that leads to station failures is a major risk to a distribution company, both financially and to the company's reputation. Proper station design and equipment selection minimizes the potential risks.

What if you could...

- Monitor, measure and control points at the gate station with one primary device that provides a high degree of connectivity to a variety of equipment?
- Get real-time data to your control room, operate independently upon erratic communication, and historize information to eliminate data loss?
- Easily configure single to multiple run custody transfer measurement to comply with your station requirements?
- Implement a cost-effective platform with ample horsepower and data storage that also allows flexibility of inputs and outputs to monitor and control any size gate station?
- Achieve network connectivity through various protocols to meet host software requirements?
- Use onboard RTU functionality including auto mapping to network Emerson devices, including Rosemount™ gas chromatographs and transmitters?

What's Your Challenge?

Gate stations employ customized monitoring and control methodologies to meet both safety and business critical needs. To meet uptime as well as pressure management and contractual supply obligations, a variety of pneumatic and electronic devices are used for local and remote automation. These devices provide the redundancy needed to ensure safety across all emergency scenarios.

Distribution companies need an integrated system to gather, calculate, store, communicate and visualize data across the infrastructure.

What's Your Opportunity?

As the primary connection to the gate station, Emerson's FB3000 Remote Terminal Unit (RTU) is the gathering point for all data being communicated to the central SCADA control room. The RTU maximizes uptime and enables operators to manage many device connections, a variety of complex calculations and immediate control commands. It also has low power requirements and is environmentally hardened.

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What's Your Opportunity? *(cont'd.)*

The FB300 RTU provides real-time measurement, control and historization of all site data to meet fiscal, operational and regulatory reporting requirements. Operating independently from the control room, the RTU provides the horsepower and storage to preserve hourly, daily and monthly history logs as well as thousands of alarms and events that ensure operation in case of loss of communication to the control room.

Advantages of Emerson's FB3000 RTU

- Technician-friendly configurability using the configuration wizard, FBxVue™ visualization tool and hot-swappable boards to reduce time spent on setup, operation and maintenance.
- Low power consumption with the ability to run autonomously using solar panels and associated battery banks.
- Personality modules that provide front-end protection to field wiring.
- Rugged hardware with a wide operating temperature range (-40°C to +75°C) to meet any field installation environment.
- Measurement-ready device with the horsepower and data storage to fulfill all gate station metering needs:
  - I/O: 7 slots of I/O cards in standard chassis – add up to 3 additional chassis for increased I/O
  - Communications: 2x Ethernet, 4x Serial
  - Protocols: DNP3, Modbus
  - Extensive Data Logging and History (up to 5 years)
  - PID and Control Logic
  - EC 61131 Programing and Applications
  - Hazardous Area Approvals: Class I, Div 2 and Zone 2

Optimize Your Gate Station with a Single RTU for Monitoring, Measurement and Control

Performance Opportunities	How Your Operation Will Benefit
Peer-to-Peer Local Connectivity Using FBxNet™	■ Simplifies local data sharing using publish and subscribe methods to access data points at each FB3000 RTU ■ Limits long-haul wiring ■ Reduces conduit installation cost and long-term maintenance of wire runs
Scalable Design	■ As the gate station increases in size, separate communication links provide expanded throughput and simultaneous diagnostics which means performance does not suffer ■ Allows standardization on a single product with configuration to meet specific site inputs, outputs and interoperability requirements
Simplified Configuration and Intuitive Programming	■ Expedite deployment with easy-to-use guided setup tools ■ Customize logic and control to meet unique requirements as needed with a complete suite of powerful yet flexible IEC 61131 programs
Autonomous Failover	■ Built-in functionality allows for input power with the highest potential to maintain supply ■ Seamless transition to the backup power module if the primary power module falls below the threshold level
Compact Footprint	■ Allows use of existing control cabinets ■ Optional through-hole or EZ Din-Rail mounting system ensure simplified design, installation and maintenance
Modular Design	■ Hot-swappable I/O and personality modules simplify and speed restoration of a faulty unit ■ Flexible, easy-to-access wiring and extended surge suppression help simplify maintenance

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