ACE3600 Remote Terminal Unit

The Next Generation of High-Performance Control

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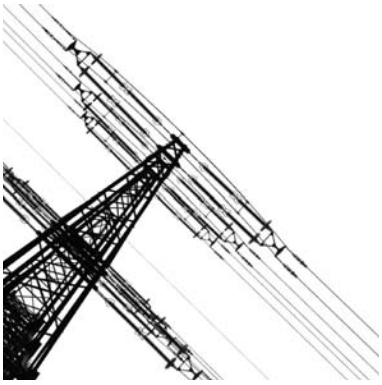

Empower Your SCADA Network

Utilities, now more than ever, are facing newer and greater hurdles. Multiple wired and wireless communication technologies are challenges to seamless networking. Heightened security concerns amplify the need for secure connections. Operating flaws, system breakdowns and security failures are unacceptable. Versatile network interoperability, powerful data management and an intuitive user interface are mandatory.

As the lead component in a SCADA system's remote monitoring and control capabilities, Remote Terminal Units (RTU) must face these challenges head on.

Operating within a wide variety of SCADA infrastructures and protocol requirements, RTU's must:

- Be versatile enough to support different communication media
- Adapt to existing and changing system requirements and platforms
- Encrypt information to protect against cyber-attacks and false signals
- Be cost-efficient to maintain and operate for future growth
- Possess the robust processing to manage large amounts of data accurately, quickly and reliably

A SCADA network equipped to meet these demands requires the next generation of RTU from a communications leader, Motorola.

The combination of ACE3600's unprecedented flexibility and straightforward operation makes it the perfect upgrade with minimal cost and effort.

Wireless Communication Versatility

ACE3600 is an all-in-one package that includes the RTU, radio and software for quick installation. The ACE3600 features a graphical user interface (GUI) that minimizes training time by allowing system configurations and network operations to be managed through simple, user-friendly applications. The GUI includes program and system self-maintenance software tools.

ACE3600 operates with multiple industry protocols and across a wide band of communication media, including:

- Fiber-optic links
- Telephone and leased lines
- VHF/UHF/800 conventional systems
- 800 MHz/UHF analog or digital trunked systems
- Multiple Address Systems (MAS)
- Broadband data over Internet Protocol (IP)
- Spread Spectrum communication
- Microwave
- Satellite
- Narrowband and broadband at speeds from 1200 bps to 100 MB

This flexible communications capability enables the ACE3600 to connect with several local devices, analyze the data and remit that information via different media to various other locations.

ACE3600 also accommodates a host of devices, sensors and display elements and has hot-swappable input/output (I/O) modules with Sequence of Event Recording (SER).

Available on-board ports can feature up to:

- Three 10/100Base-T ports
- Four serial ports
- Two radio modem ports

Robust Transmission Processing

The ACE3600's processing power provides accurate data analysis for the most critical, real-time monitoring and control applications.

- ACE3600's Optimized Wireless Protocol works in concert with its flexible communication capabilities to gather and analyze data from multiple sensors or other intelligent electronic devices (IED), at any number of remote sites.
- Transmissions from sensors and IED's are sent accurately and dependably to any number of locations or any computer that has access to an Internet/Intranet connection and a standard Web browser.
- The RTU acts as a communication node or Store-and-Forward repeater, allowing for coverage extension or data transfer between RTU's in the event of a disruption in service. This enables redundant data transfer for an even higher level of security, dead-spot elimination and additional reliability.
- The ACE3600 eliminates the need to make a choice between an RTU and PLC, by incorporating the best features of mid-sized PLC functions to provide local programming and communications capability.

The Latest in Security

Maintaining the integrity of SCADA systems requires an RTU network that sends and receives data securely. Providing security through reliable operation and automated disruption protection, the ACE3600 provides increased data security through multiple layers of encryption and time-based data authentication.

- ACE3600 can be used as a secure router with data sent to the RTU from various non-secure sources and held for secure forwarding.
- ACE3600's ability to diagnose, calibrate, program and update other RTU's alleviates technicians spending time canvassing remote sites, provides immediate assessment of a failure, and reduces service downtime.
- Over-the-air uploads and downloads are performed between RTU's or the control center for diagnostics in the event of an accidental or malicious disruption.
- Rigid password security protects the system from unauthorized access.
- Motorola's secure SCADA and Motorola Data Link Communication (MDLC) protocol is the trusted solution used by numerous Federal agencies and military bases across the globe.

Powerful Solutions for Essential Applications

Wastewater Control

- Monitors well parameters for sophisticated pump sequencing and alerts
- Monitors water levels at the reservoir/water tower, and flow and pressure in the distribution grid
- Controls regulating valves and monitors the water quality based on analytical parameters
- Protects and ensures water quality and conservation by the monitoring of wells so that excessive pumping is mitigated
- Provides critical response system fault detection for leaks or unauthorized water use

Public Warning Systems

- Provides secure communication between the sirens and the control center
- Provides back-up communications, silent test and download of recorded public warning messages, and siren activation
- Expands communication capabilities through a select combination of tones and pre-recorded voice messages

Oil and Gas Safety

- Continuously monitors, measures and controls different aspects of the production, refining, transportation, storage and distribution of oil and gas
- Measures oil and gas flow rates per American Gas Association (AGA) standards, accumulated flows, line and wellhead pressures
- Analyzes, coordinates and controls with enhanced system monitoring to manage oil spills, leakage and fire detection and emergency shut down procedures

Fire Station Alerting Solution

- Alerts specific bunkroom(s), waking only the appropriate response team(s) reducing work, stress and fatigue
- Protects the fire station from theft by closing the doors after the engines have left
- Guards against a fire in the fire station by shutting down designated high-risk areas within the station, such as the kitchen, which are quickly left unattended during an emergency

Electrical Distribution

- Monitors and controls transformers, substation protection relays and circuit-breaker reclosers utilizing detection technology to register which feeder sections experience a fault current
- Uses advanced communication capabilities for fault isolation and system restoration to remotely isolate a damaged MV power grid section and restore power to customers
- Regulates voltage and the power factor through remote control of capacitor banks along the grid providing more accurate billing and a reduction in energy losses along the network
- Helps power generation stations to effectively meet the growing demand for electricity through power quality monitoring

Why Motorola?

Only Motorola combines the best of technology and Six Sigma customer service processes to design the industry-leading ACE3600 Remote Terminal Unit, as well as a full-line of SCADA components for efficient and protected operations.

Only Motorola's 75 years of experience designing and manufacturing secure, mission critical communications systems can provide the most versatile, secure, and accurate SCADA operating system for your business. For the last 30 years, Motorola's reliable, compatible, wireless SCADA devices have been implemented all over the world.

Only Motorola has the global wireless technology infrastructure and engineering muscle with 21,000 patents and over $3.7 billion spent in research and development. Motorola's standards-based technology benefits customers with increased versatility, compatibility and seamless interoperability.

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Motorola, Inc.
1301 E. Algonquin Road
Schaumburg, Illinois 60196 U.S.A.
1-800-367-2346 x4821

Visit www.motorola.com/datasolutions

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