Smart Solutions for Remote Monitoring and Alarms
Active Ethernet I/O with Active OPC Server

- Genuine PC-free solutions for monitoring and alarm systems
- Zero programming with menu-driven logic configurations
- Active alarm message reports with precise time stamps
- Support SMS/SNMP traps/e-mail/TCP/UDP/CGI commands
- Easy integration with Active OPC Server and DLL library

Distributed Active Ethernet I/O
Modular Active Ethernet I/O
Active GPRS I/O

MOXA
Intrusion Detection and Alarm Systems

Moxa’s ioLogik Active Ethernet I/O is a perfect solution for large facility intrusion detection systems. The ioLogik's built-in intelligence allows the I/O device to monitor intrusion signals from motion, tilt, and optic sensors, as well as send out real-time alarms. A typical application is an airport intrusion detection and alarm system. Security around airport runways and terminals require instant alarm notices to be sent to the control center for rapid security responses. The ioLogik can proactively send out alarm messages to the control center, ensuring real-time acquisition of intrusion alerts. Alarms are always reported so system administrators don’t need to worry about dropped alarms, such as the case with traditional polling mechanisms. Thanks to Click&Go™ logic, the ioLogik is also capable of local alarm control.

Application Requirements
- Alarm retrieval from distributed sensors over vast areas
- Instant alarms and intrusion reports
- Local intelligence for local alarms
- Ease of use, integration, and maintenance

Unmanned Facility Monitoring

With local intelligence and versatile active reporting communication protocols, the ioLogik is practically tailor-made for unmanned facility monitoring. The ioLogik can be used to monitor intrusion, humidity, temperature, power supply, gas exhaustion and fuel tank levels, power generator status, and actively update I/O tags to the central SCADA system with Active OPC Server. Active OPC Server is also designed to solve dynamic and private IP issues in GPRS communication. That is, users no longer need to purchase a fixed public IP SIM card. The Active OPC Server will take care of the communication from SCADA to field devices, making installation and project implementation easier. Moreover, the active report method also makes data communication over wireless networks possible. Users can enjoy the benefits of real-time event monitoring without worrying about network bandwidth issues.

Application Requirements
- Data transmission in low bandwidth environments
- Instant alarm reports
- Local intelligence for local alarms
- Ease of use, integration, and maintenance

Water and Waste Water Treatment Monitoring and Control System

The growing awareness of environmental protection has made water and wastewater treatment a rapid growing business around the world. Water distribution or waste water collection systems need to monitor various factors including pump status, water pressure, tank level, water volume, valve status, power status, and CSO (combined sewage overflow). With its local control capability, the ioLogik is able to provide water and wastewater monitoring systems with pump control and power management.

Application Requirements
- Data collection over a vast area
- Local pump control and power management
- Easy integration with a SCADA system
- PC-free module control over the network
Airport Intrusion Detection and Alarm System

- Intrusion alarms and instant active reports
- Click&Go logic can reduce fake alarms
- Active alarm message reports with precise time stamps
- Versatile alarm media with TCP/UDP/SNMP trap/email/cgi command/Active OPC Server
- DI to DO local intelligence control for local alarms
- Menu-driven control logic setting reduces maintenance effort

Unmanned Site Monitoring and Alarms

- Quad-band GPRS
- Real-time I/O status active update
- Versatile alarm media with TCP/UDP/SNMP trap/email/SMS
- Menu-driven control logic setting reduces maintenance effort
- Dynamic and private IP issue resolved with Active OPC Server
- One RS-232/422/485 port for serial-to-GPRS communication
- SD card for data logging
- Off-line alarm buffering

Water Pumping Station Monitoring

- Active alarm messaging
- Versatile alarm media with TCP/UDP/SNMP trap/email/SMS/cgi command
- Module to module control with remote action functionality for a genuine PC-free solution
- Menu-driven control logic setting reduces maintenance effort
- Editable email and SMS messaging to multiple receivers
More Power and Flexibility with the New Generation Click&Go

IF-THEN-ELSE
Since IF-THEN-ELSE statements are a fundamental part of any programming language, even an untrained engineer will be able to use Click&Go’s intuitive IF-THEN-ELSE configuration format to finish an I/O configuration in under five minutes.

Compared with the previous version of Click&Go, more functions are supported for each IF-THEN-ELSE description. See the table on page 4 for details.

Remote Action
Programmers sometimes need to trigger remote digital output based on local analog values. In the example shown here, a water level sensor was installed in a water tower. When the water level drops below a preset level, the analog signal from the sensor will be converted to a remote digital output, which triggers the pump to turn on. Although this is a relatively simple example, Click&Go can handle different set points and trigger conditions.

Benefits:
• Only two modules needed without extra PC or controller
• Easy to configure
• Flexible action and condition settings
Click&Go supports 24 timers in the control logic. Users can define these timers for different kinds of applications such as a delay timer (delay_on, delay_off, on_delay, off_delay) or timer counter. All time-based control systems can use this function.

Benefits:
- Time-based control capability
- Flexibility for actions with the timer function

Internal Register

Twenty-four Modbus registers are available for a user’s application, and users can change a Modbus address from the SCADA software even when Click&Go is running. The diagram at the right shows how to use SCADA/custom software to change the internal register with Modbus/TCP protocol. With this function, users can easily integrate the Active Ethernet I/O product with their control system. Anywhere from 0 to 255 trigger conditions can be defined, and when the trigger condition equals the Modbus value, the ioLogik will start running the user’s pre-defined actions.

Benefits:
- Click&Go logic is compatible with SCADA software
- DO can be controlled when Click&Go is running
- Cascade different control rules with internal registers

Schedule

The fuel shortage is a hot issue for businesses around the world, making saving energy an increasingly important topic for more and more people. For example, automatically turning off lights when they are not in use is a simple, but effective way to save energy. The control device is a key component of automatic light control applications, and Moxa’s Active Ethernet I/O products provide a schedule function to help users with this task. Technicians can easily and quickly use the schedule function to define a periodic control scheme. The schedule function can also be used for lighting, sprinklers, and heating systems. Note that both the time of day and date can be included as part of the control schedule.

Benefits:
- Flexibility for periodic control
- Customer definable
Click&Go Logic

**CGI Commands**

CGI commands are based on the HTTP protocol, which is the most popular protocol for accessing the Internet. Users will be able to access Moxa’s I/O devices from anywhere with a simple web browser, and can even communicate through firewalls. Software developers can use CGI commands to integrate I/O functions into their software, which is often used with IP surveillance systems. Moxa’s Active Ethernet I/O products can both send out and receive CGI commands, and for this reason are compatible with surveillance devices that support CGI commands.

Benefits:
- Easy to integrate with web-based software
- Firewall friendly
- Control I/O from anywhere via web browser

**DLL Library**

The ioLogik includes VB, VC, BCB and .Net libraries to allow AP developers to shorten development time and reduce costs.

Benefits:
- Shortened development time
- Reduced development costs

**Active Ethernet I/O vs. Remote I/O**

<table>
<thead>
<tr>
<th></th>
<th>Active Ethernet I/O</th>
<th>Remote I/O</th>
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<tbody>
<tr>
<td><strong>Protocols</strong></td>
<td>Modbus for IA engineers, SNMP/TCP/UDP/e-mail, CGI Commands for IT engineers</td>
<td>Modbus</td>
</tr>
<tr>
<td><strong>Communication Architecture</strong></td>
<td>Supports push and pull architecture (Push technology uses TCP, UDP, SNMP trap, email, and Active OPC Server)</td>
<td>Pull</td>
</tr>
<tr>
<td><strong>Local Control Capability</strong></td>
<td>Click&amp;Go logic, No programming effort required, Menu driven</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Interface</strong></td>
<td>Ethernet/GPRS</td>
<td>Ethernet</td>
</tr>
<tr>
<td><strong>Solution</strong></td>
<td>Standalone solution</td>
<td>PLC components</td>
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</table>
Push Technologies Bring Intelligence to Your Sensors

Traditional sensor I/O data acquisition requires polling from a central SCADA system and HMI. This method not only increases system burden, but also requires polling settings on the SCADA or HMI. By utilizing push technologies, or report by exception, the ioLogik enables an event response sensor system and transforms network sensors into intelligent devices that allow system integrators to save valuable time in deployment and programming. The ioLogik supports various kinds of active communication interfaces including TCP, UDP, CGI command, email, SMS, SNMP trap, and Active OPC Server.

Upgrade Your SCADA from “Pull” to “Push”

Traditionally, OPC servers only support the “pull” architecture for I/O devices. This means that your SCADA system would use a continuous polling method to collect relevant data. Moxa’s Active OPC Server with non-polling architecture supports the standard OPC protocol, but also offers event-driven, active (or “push”) communication with I/O devices to provide real-time signals when the I/O status is changed. You will be able to efficiently reduce data traffic and make use of this optimal bandwidth-saving solution.

By adopting Moxa’s Active OPC Server, users don’t need to create tags one by one. With ioAdmin, you can save time by uploading I/O configurations automatically.

With Traditional OPC

15+ steps to create 1 tag

With Moxa Active OPC

Just 1 click to create 20 or more tags
Active Ethernet I/O: The Smart Choice for Remote Monitoring

ioLogik W5340 Active GPRS Ethernet I/O

Product Features:
- 4 AIs, 8 software configurable DIOs, 2 relays
- Quad-band GPRS
- Programming free IF-THEN-ELSE configuration method, increases time-to-market
- Versatile alarm media with TCP/UDP/SMS/email/SNMP trap
- SD card for data logging
- Off-line alarm buffering
- Built-in Web Console
- One RS-232/422/485 port for serial-to-GPRS communication

Active OPC Server resolves private IP communication issues in GPRS environments

The biggest issue for data acquisition over GPRS networks involves the constant changing of private IP addresses. This makes the implementation of a GPRS solution difficult because the user needs to pay extra fees for a MDVPN, mobile data virtual private network service, or get a public and fixed IP address. To solve this problem, the ioLogik W5340 is equipped with Active OPC Server so users don’t need to worry about what kind of IP address they get from the internet service providers. Just install the SIM card and your GPRS solution is ready to go!
ioLogik E4200 Modular Active Ethernet I/O

Product Features:

- Compact size, slice type form factor for maximum I/O combination flexibility
- Dual LANs for communication redundancy
- One RS-232 port for SMS alarms
- Programming-free IF-THEN-ELSE logic reduces time to market
- Off-line alarm buffering

Dual LANs enhance communication redundancy

For a remote monitoring and alarm system, the most important consideration is to make sure the alarm can be acquired accurately and immediately. The ioLogik E4200’s active report feature provides real-time monitoring capability and achieves communication reliability with a dual LAN design to establish a redundant monitoring and alarm system.
Moxa Industry I/O Solutions

Active Ethernet I/O

**Analog Modules**

**ioLogik E2242** (4 AIs, 12 DOs)
- Software configurable DI or DO channels
- +/-150 mV, 0 to 150 mV, +/-500 mV, 0 to 500 mV, +/-5 V, 0 to 5 V, +/-10 V, 0 to 10 V, 0 to 20 mA, 4 to 20 mA
- Adjustable sampling rate

**ioLogik E2240** (8 AIs, 2 AOs)
- +/-150 mV, +/-500 mV, +/-10 V, 0 to 20 mA, 4 to 20 mA
- Adjustable sampling rate
- AI to AO signal replication over IP

**ioLogik E2262** (8 TC inputs, 4 DOs)
- Supports J, K, T, E, R, S, B, N types TC and mV
- Built-in sensor temperature mapping tables
- 16-bit resolution

**ioLogik E2260** (6 RTDs, 4 DOs)
- PT, JPT, Ni and RTD sensor supported
- Built-in sensor temperature mapping tables
- 16-bit resolution

**Digital Modules**

**ioLogik E2212** (8 DI, 8 DOs, 2 DOs)
- Software configurable DI or DO channels
- Dry contact or wet contact (PNP/NPN) supported

**Ease of Use**
- Programming-free IF-THEN-ELSE control logic
- Menu-driven configuration interface
- Web Console

**Ease of Integration**
- DLL Library SDK
- Active OPC Server no OPC tag creation needed
- CGI command for web-based SCADA

**Versatile Communication Methods**
- TCP/UDP
- CGI Command
- eMail
- SNMP trap

**Push Technology**
- I/O event report by exception
- Built-in RTC to provide precise timestamps for alarm messages
- Save bandwidth by 80%
- Increase response time by 7 times

**Temperature Modules**

**ioLogik E2260** (6 RTDs, 4 DOs)
- PT, JPT, Ni and RTD sensor supported
- Built-in sensor temperature mapping tables
- 16-bit resolution

**ioLogik E2262** (8 TC inputs, 4 DOs)
- Supports J, K, T, E, R, S, B, N types TC and mV
- Built-in sensor temperature mapping tables
- 16-bit resolution
ioLogik E2210 (12 DI, 8 DO)
- DI or counter mode supported
- Dry contact or wet contact (NPN) DO or pulse output

ioLogik E2214 (6 DI, 6 Relays)
- 6 Form A relays
- Relay: 5A/250 VAC or 5A/30 VDC
- Relay counter for relay usage monitor

ioLogik E2200 Modular I/O
- Supports up to 16 I/O modules (DI/O 256 points or AI/O up to 64 points)
- Dual LANs for network redundancy
- SMS alarms

GPRS Module
ioLogik W5340 (4 AIs, 8 DIOs, 2 Relays)
- Quad-band GPRS
- +/-150 mV, +/-500 mV, +/-5 V, +/-10 V, 0 to 20 mA, 4 to 20 mA
- Data logging

Remote Ethernet I/O

ioLogik E1200
Daisy-chains Remote Ethernet I/O
- Built-in 2-port Ethernet switch
- Easy integration with SCADA using Active OPC Server
- Painless migration with user definable Modbus address

| Model | Description | DI/O | AIs
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<tbody>
<tr>
<td>E1210</td>
<td>16 DI</td>
<td></td>
<td></td>
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<tr>
<td>E1211</td>
<td>16 DO</td>
<td></td>
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</tr>
<tr>
<td>E1212</td>
<td>8 DI, 8 DO</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E1214</td>
<td>8 DI, 6 Rel</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>E1240</td>
<td>8 AI</td>
<td></td>
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</tbody>
</table>

Available Q3 2009
Experience the easy-to-use ioLogik now!

The ioLogik Starter Kit package includes:
- ioLogik E2212
- Evaluation board
- Power adapter
- Quick startup guide
- ioLogik instruction video

For more information, please contact our sales representative or worldwide branch in your region, send emails to io@moxa.com or visit Moxa website at: www.moxa.com/io.