

Ethernet I/O Modules: ADAM-6000 / 6200 / 6300

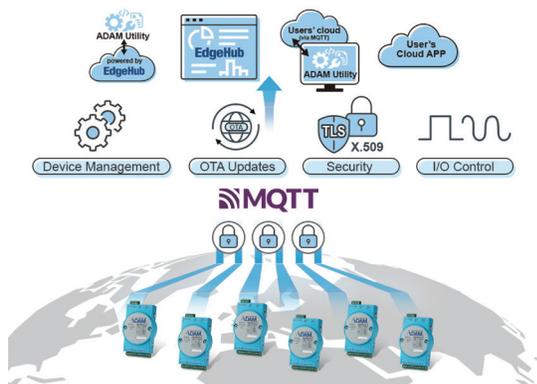
Introduction

Advantech's ADAM-6000/6200/6300 Ethernet I/O modules are easily integrated so they can remotely monitor and Cross-site Devices more flexibly.

Feature Highlights

Secure Cloud I/O

Innovative ADAM-6000/6200 Secure Cloud I/O offers device management, OTA updates, security and device monitoring functions in IoT era and help user easily manage widespread assets across diverse applications



- **Device Management:** UUID, networking setting, I/O channel configuration
- **OTA Updates:** firmware, certificate and configuration mass deployment
- **Security:** TLS, X.509 certificate, cipher suites, IP allowlisting, protocol disabled
- **I/O Control:** digital I/O on/off, analog I/O read/write, I/O value periodically updated, alarm notification

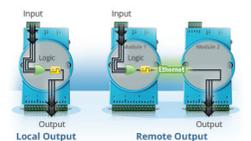
Simple and Intuitive Logic Control

ADAM-6000/6200 Peer-to-Peer (P2P) and Graphic Condition Logic (GCL) modules can perform as standalone products for measurement, control, and automation.



Peer-to-Peer (P2P) connection

- Easy channel mapping from different I/O modules without extra programming effort or additional controllers.
- Utilizes Peer-to-Peer modules, just configure settings through ADAM.NET utility.



Graphic condition logic (GCL)

- GCL function is built-in ADAM-6000 and ADAM-6200 modules for users to easily set up logic rules in any application.
- User defined logic rules through graphical configuration environment in ADAM.NET utility.
- No additional controllers or programming is needed.

Easy Deployment and Robust Communication

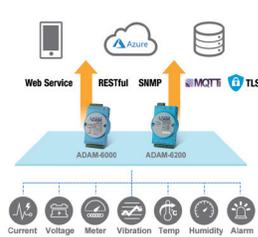


Flexible deployment with daisy chain networking and auto-bypass protection

ADAM-6200/6300 series supports daisy chain connectivity that offers flexible cabling and space saving capabilities. With Ethernet auto-bypass function supported to prevent accidental power failures if one of the modules unexpectedly shuts down.

Rich IoT Protocols

The ADAM-6000/6200 series supports multiple protocols for IoT applications: MQTT, SNMP, Restful APIs, and Modbus, which are very flexible and can be easily integrated with Microsoft Azure, Database, Network and SCADA systems.



Cloud

- Support EdgeHub, Azure IoT Hub and any user's cloud.

MQTT

- Actively publish MQTT messages with user defined intervals.
- Shorten downtime with agile sequence of event ("ms" resolution) and alarm notification.

- Privacy assured with the TLS (Transport Layer Security).
- User defined topic and payload to integrate existing system.

SNMP

- Simple way to monitor I/O data on NMS (Network Management System).
- SNMP trap to notify alarm events.
- Reduces implementation cost with ADAM MIB (Management Information Base) file.

Industrial Grade with Isolation & Wide-operating

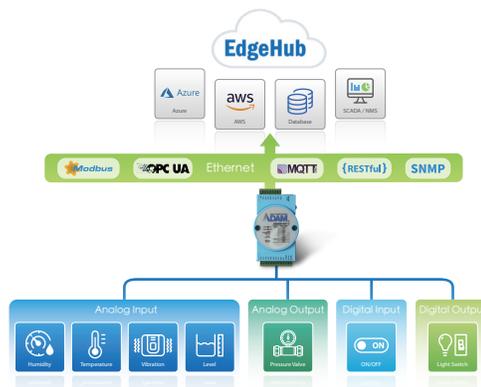
Temperature



ADAM-6000/6200/6300 series has a rugged design.

- Supports isolation protection to avoid system damage from high-energy noise.
- Supports operating temperatures of between -40 ~70°C and can perform in most harsh environments.

Application Structure



ADAM-6000 / 6200 / 6300 Series Comparison

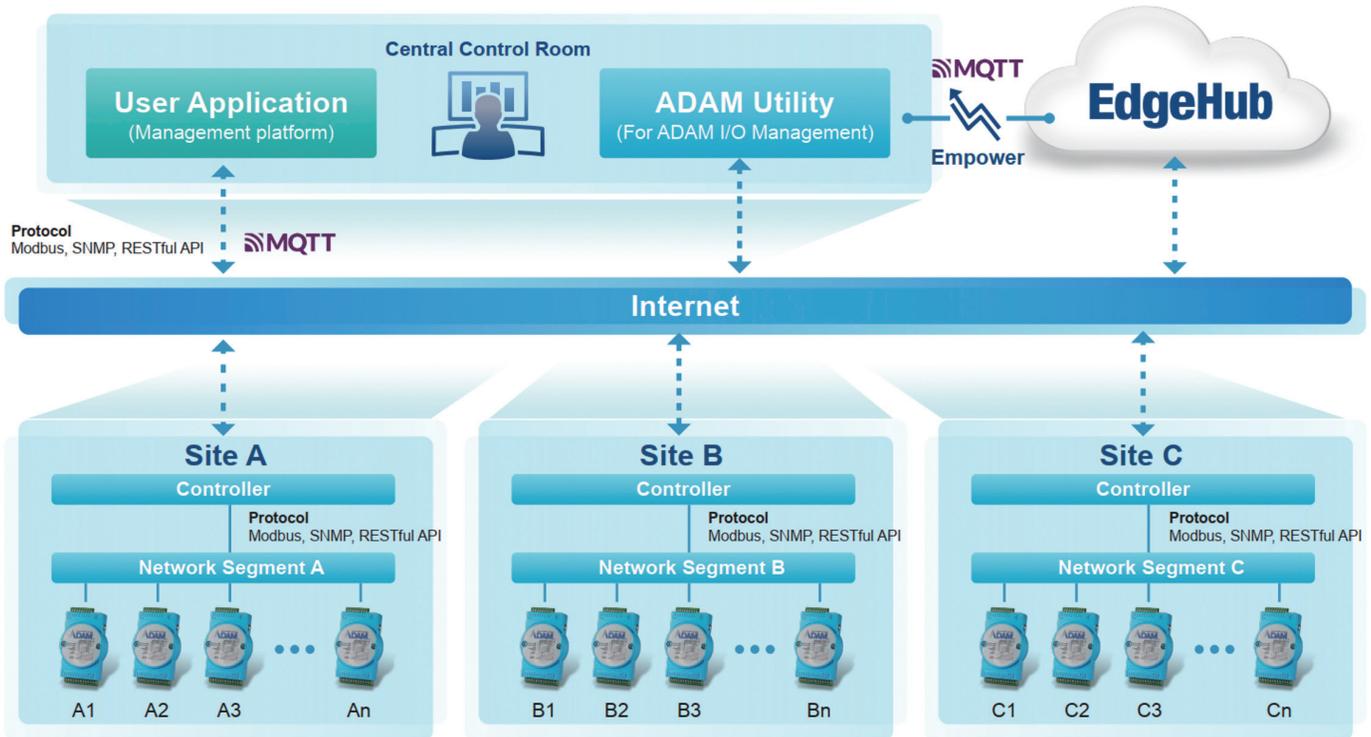
Series Name	ADAM-6000 Series	ADAM-6200 Series	ADAM-6300 Series	
Daisy-chain Connectivity	-	✓	✓	
Protocol	MQTT	✓	(By request)	
	SNMP	✓	(By request)	
	Modbus	✓	✓	
	RESTful	✓	✓	
	OPC UA	-	-	✓
	Cloud I/O	✓	✓	(By request)

EdgeHub-enabled Cross-Site Device Management Solution

Effortless Cross-Site Management - Free to Use Now!



More information on website

Direct I/O and Centralized Configuration

- EdgeHub enables device management with remote configuration, monitoring and maintenance capabilities for Advantech devices.
- Configure and maintain ADAM devices via ADAM Utility with built-in EdgeHub and web interface.
- Monitor and control I/O in real-time
- Manage user-defined configuration profiles and apply to devices
- Update device firmware remotely through secure OTA
- Manage multiple devices in groups with batch configuration and monitoring

Configurable Data Logging and Dashboard

- Flexible data logging and visualization with selectable tag configurations and customizable dashboard.
- Configure data logging by selecting I/O tags to store
- Customize web-based dashboard to view real-time and historical data

Multi-Tenant Architecture

- Support multiple organizations with isolated environments and resource management through tenant management.
- Tenant isolation – device, data storage, network traffic, API access
- Hierarchical tenant structures with parent-child relationships for enterprise deployments
- Tenant-specific user management and authentication
- Device connection quota management per tenant

Flexible Event Notification System

- User-defined event settings with real-time notification delivery through multiple communication channels.
- Define event rules based on device I/O tags
- Configure targeted notifications with customizable groups, users, and content
- Distribute alerts through email and other supported channels
- Track event history and acknowledgement status

Enterprise-Grade Access Control

- Secure access management with role-based control (RBAC) and user account
- Define role-based access control with customized permission sets
- Control user access right to devices configurations, monitoring and operations
- Manage user accounts with hierarchical roles and granular permissions

ADAM-6217

ADAM-6224

8-ch Isolated Analog Input Modbus TCP Module

4-ch Isolated Analog Output Modbus TCP Module



ADAM-6217



ADAM-6224



Specifications

Analog Input

- Channels 8 (differential)
- Input Impedance > 10 MW (voltage)
120 W (current)
- Input Type mV, V, mA
- Input Range ± 150 mV, ± 500 mV, ± 1 V, ± 5 V, ± 10 V, 0 ~ 20 mA, 4 ~ 20 mA, ± 20 mA
- Span Drift ± 30 ppm/ $^{\circ}$ C
- Zero Drift ± 6 μ V/ $^{\circ}$ C
- Resolution 16-bit
- Accuracy $\pm 0.1\%$ of FSR (Voltage) at 25 $^{\circ}$ C
 $\pm 0.2\%$ of FSR (Current) at 25 $^{\circ}$ C
- Sampling Rate 10 sample/second (total)
- CMR @ 50/60 Hz 92 dB
- NMR @ 50/60 Hz 67 dB
- Common Mode 200 V_{DC}

Ordering Information

- ADAM-6217 8-ch Isolated Analog Input Modbus TCP Module

Specifications

Analog Output

- Channels 4
- Output Impedance 2.1 Ω
- Output Settling Time 20 μ s
- Driving Load Voltage: 2k Ω
Current: 500 Ω
- Programmable Output Slope 0.125 ~ 128 mA/sec
- Output Type 0.0625 ~ 64 V/sec
- Output Range V, mA
- Output Range 0 ~ 5 V, 0 ~ 10 V, ± 5 V, ± 10 V, 0 ~ 20 mA, 4 ~ 20 mA
- Accuracy $\pm 0.3\%$ of FSR (Voltage) at 25 $^{\circ}$ C
 $\pm 0.5\%$ of FSR (Current) at 25 $^{\circ}$ C
- Resolution 12-bit
- Current Load Resistor 0 ~ 500 Ω
- Drift ± 50 ppm/ $^{\circ}$ C

Digital Input

- Channels 4 (Dry Contact only)
- Dry Contact Logic 0: Open
Logic 1: Closed to DGND

- Support DI Filter
- Support Inverted DI Status
- Support Trigger to Startup or Safety Value

Ordering Information

- ADAM-6224 4-ch Isolated Analog Output Modbus TCP Module

Common Specifications

General

- Ethernet 2-port 10/100 Base-TX (for Daisy Chain)
- Protocol Modbus TCP, TCP/IP, UDP, HTTP, DHCP, RESTful, SNMP (B version), MQTT (B version)
- Connector Plug-in 5P/15P screw terminal blocks
- Power Input 10 ~ 30 V_{DC} (24 V_{DC} standard)
- Watchdog Timer System (1.6 seconds)
Communication (Programmable)
- Dimensions 70 x 122 x 27 mm
- Protection Built-in TVS/ESD protection
Power Reversal protection
Isolation protection: 2500 V_{DC}
- Power Consumption ADAM-6217: 3.5W @ 24 V_{DC}
ADAM-6224: 6W @ 24 V_{DC}

Features

- Daisy chain connection with auto-bypass protection
- Remote monitoring and control with smart phone/pad
- Group configuration capability for multiple module setup
- Flexible user-defined Modbus address
- Intelligent control ability by Peer-to-Peer and GCL function
- Multiple protocol support: Modbus TCP, TCP/IP, UDP, HTTP, DHCP, RESTful, SNMP (B version), MQTT (B version)
- Web language support: XML, HTML 5, Java Script
- System configuration backup
- User Access Control

Environment

- Operating Temperature -10 ~ 70 $^{\circ}$ C (14 ~ 158 $^{\circ}$ F)
-40 ~ 70 $^{\circ}$ C (-40 ~ 158 $^{\circ}$ F) (B version)
- Storage Temperature -20 ~ 80 $^{\circ}$ C (-4 ~ 176 $^{\circ}$ F)
-40 ~ 85 $^{\circ}$ C (-40 ~ 185 $^{\circ}$ F) (B version)
- Operating Humidity 20 ~ 95% RH (non-condensing)
- Storage Humidity 0 ~ 95% RH (non-condensing)