ADAM-6000 Ethernet I/O Modules

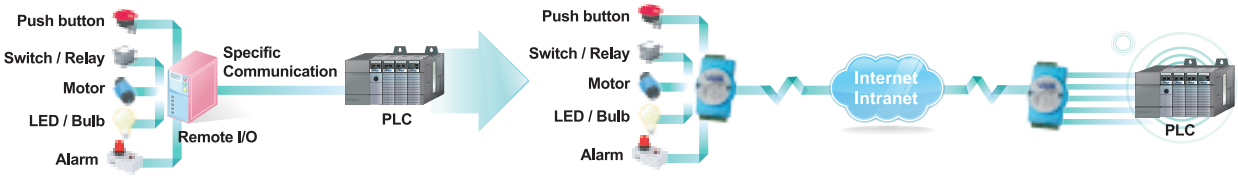
Introduction

Nowadays Advantech's ADAM-6000 accomplishes the integration of automation and enterprise systems easily through internet technology, so that users can avoid changing the entire architecture of the control system and even remotely monitor the device status more flexibly. Advantech's ADAM-6000 modules are empowered by peer-to-peer (P2P) and Graphic Condition Logic (GCL), and can perform as standalone products for measurement, control and automation. Instead of having additional controllers or programming, system configurations can be done in an extremely short time with the easy-to-use and intuitive graphic utility.

Features

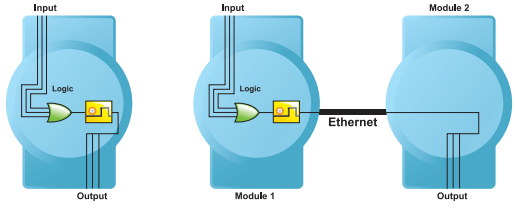
Peer-to-Peer

Unlike master/client mode, peer-to-peer enabled modules will actively update the input channel status to specific output channels. Without dealing with the trouble of long distance wiring, users can define the mapping between a pair of modules (one input and one output module) and then the input value will be transferred to the output channel actively, which greatly simplifies the process and means that no controller is required.



Graphic Condition Logic

GCL (Graphic Condition Logic) functionality empowers Ethernet I/O modules control ability. Users can define the control logic rules through graphical configuration environment in Adam/Apax .NET Utility, and download defined logic rules to specific ADAM-6000 Ethernet I/O module. Then, that Ethernet module will execute the logic rules automatically just like a standalone controller. With the easy-to-use and intuitive graphic utility, system configurations can be done in an extremely short time.



Local Output Remote Output

Advanced Security and High Reliability

ADAM-6000 Ethernet I/O modules not only have a fast response time (< 1.2 ms), but also advanced security and reliability. When engineers use peer-to-peer modules, the output module can only be controlled by its paired input module, rather than controlled by other non-authorized computers or devices. Even when communication between pairs of ADAM-6000 peer-to-peer modules is broken, the digital output module can generate pre-defined values to ensure safety.

Online Monitoring

After users complete all GCL configurations in Adam/Apax .NET Utility, they can simply click the "Run Monitoring" button. Then users can see a real-time execution workflow of the logic rules on ADAM-6000 modules and current input values will also be displayed. This greatly helps users to maintain the system.

ADAM-6000 Series Comparison Table





Model		ADAM-6015	ADAM-6017	ADAM-6018	ADAM-6022	ADAM-6024
Description		7-ch Isolated RTD Input Modbus TCP Module	8-ch Isolated Analog Input Modbus TCP Module with 2-ch DO	8-ch Isolated Thermocouple Input Modbus TCP Module with 8-ch DO	Ethernet-based Dual-loop PID Controller	12-ch Isolated Universal Input/Output Modbus TCP Module
Interface		10/100 Mbps Ethernet				
Peer-to-Peer*		Yes			No	Receiver Only**
GCL*		Yes			No	Receiver Only**
Resolution		16 bit			16 bit for AI 12 bit for AO	16 bit for AI 12 bit for AO
Analog Input	Channels	7	8	8	6	6
	Sampling Rate	10 Hz (total)				
	Voltage Input	-	±150 mV, ±500 mV, ±1 V, ±5 V, ±10 V	-	±10 V	±10 V
	Current Input	-	0 ~ 20 mA 4 ~ 20 mA	-	0 ~ 20 mA 4 ~ 20 mA	0 ~ 20 mA 4 ~ 20 mA
	Direct Sensor Input	Pt, Balco and Ni RTD	-	J, K, T, E, R, S, B Thermocouple	-	-
	Burn-out Detection	Yes	-	Yes	-	-
	Math. Functions	Max. Min. Avg.	Max. Min. Avg.	Max. Min. Avg.	-	-
Analog Output	Channels	-	-	-	2	2
	Current Output	-	-	-	0 ~ 20 mA, 4 ~ 20 mA with 15 V_{DC}	0 ~ 20 mA, 4 ~ 20 mA with 15 V_{DC}
	Voltage Output	- -	-	-	0 ~ 10 V_{DC} with 30 mA	0 ~ 10 V_{DC} with 30 mA
Digital Input and Output	Input Channels	-	-	-	2	2
	Output Channels	-	2 (Sink)	8 (Sink)	2 (Sink)	2 (Sink)
	Extra Counter Channels	-	-	-	-	-
	Counter Input	-	-	-	-	-
	Frequency Input	-	-	-	-	-
	Pulse Output	-	-	-	-	-
	High/Low Alarm Settings	Yes	Yes	Yes	-	-
Isolation Protection			2,000 V_{DC}		2,000 V_{DC}***	2,000 V_{DC}***
Remark		-	-	-	Built-in Dual Loop PID Control Algorithm	-





Model		ADAM-6050	ADAM-6051	ADAM-6052	ADAM-6060	ADAM-6066
Description		18-ch Isolated Digital I/O Modbus TCP Module	14-ch Isolated Digital I/O Modbus TCP Module with 2-ch Counter	16-ch Source-type Isolated Digital I/O Modbus TCP Module	6-ch Digital Input and 6-ch Relay Modbus TCP Module	6-ch Digital Input and 6-ch Power Relay Modbus TCP Module
Interface		10/100 Mbps Ethernet				
Peer-to-Peer*		Yes				
GCL*		Yes				
Digital Input and Output	Input Channels	12	12	8	6	6
	Output Channels	6 (Sink)	2 (Sink)	8 (Source)	6 (Relay)	6 (Power Relay)
	Extra Counter Channels	-	2	-	-	-
	Counter Input	3 kHz	4.5 kHz	3 kHz	3 kHz	3 kHz
	Frequency Input	3 kHz	4.5 kHz	3 kHz	3 kHz	3 kHz
	Pulse Output	Yes				
	High/Low Alarm Settings	-	-	-	-	-
Isolation Protection		2,000 V_{DC}				

*: Peer-to-Peer and GCL cannot run simultaneously, only one feature is enabled at one time.

**: ADAM-6024 can only act as a receiver and generate analog output when using Peer-to-Peer or GCL.

***: Only for analog input and analog output channels.