ADAM-5000 Series

Distributed I/O Systems

Ethernet-based Data Acquisition and Control System

With the ADAM-5000/TCP as your Ethernet I/O data processing center, you can monitor and control field signals at a speed of 10/100 Mbps. The best field-proven communication performance that can be reached in industrial network environments. Additionally, the popular Modbus/TCP protocol is supported as well.

RS-485 based Data Acquisition and Control System

The ADAM-5000/485 system is a data acquisition and control system that can acquire, monitor and control data through multi-channel I/O modules. It communicates with a network master over a twisted-pair, multi-drop RS-485 network. Both ADAM ASCII and Modbus/RTU protocols are supported.

PC-based Controllers

Ethernet-enabled PC-based Controllers

The ADAM-5510 series of PC-based programmable controllers includes ADAM-5510M, ADAM-5510E, ADAM-5510/TCP and ADAM-5510E/TCP. They feature Intel x86-based CPUs running Datalight ROM-DOS.

Users can use Borland C 3.0 to develop the application program and then download it by Windows-based ADAM-5510 series utility. The Ethernet-enabled feature of ADAM-5510/TCP and ADAM-5510E/TCP enables features like:FTP server, web server, TCP/UDP connections and email alarm. The ADAM-5510 controllers also have high expansion capability by supporting Modbus/RTU master/slave and Modbus/TCP client/server functions.

ADAM-5550CE features AMD GX2 CPU running Windows CE operating system. Users can use Microsoft Visual Studio .NET to develop the application program.

ADAM-5550KW and ADAM-5510KW series allow users leverage IEC 61131-3 SoftLogic programming environment to complete their automation task.

Open Network and Fieldbus Solutions for Device Networking

Introduction

The Fieldbus concept will change the control environment and device characteristics of future control systems in both processing and manufacturing. Compared with traditional systems, the Fieldbus system reduces cost of cabling, commissioning, and installation. In addition, the Fieldbus system has greater reliability.

The ADAM-5000 series, a compact distributed data acquisition and control system, supports the shift toward Fieldbus-based systems. Based on popular Fieldbus data communication structures such as RS-485 and Modbus, the ADAM-5000 series now offers two different DA&C systems that allow field I/O devices to easily connect to PC network applications: the ADAM-5000 DA&C systems and the ADAM-5510 series of PC-based controllers.

Distributed I/O Systems & PC-based Controllers

Maximum System Design Flexibility

The ADAM-5000's modular design allows users to tailor solutions based on their own requirements. Built-in programmable I/O ranges and alarm outputs enhance flexibility in system design. A variety of communication media such as twisted-pair wiring, radio modems and fiber optics are supported.

System Maintenance and Troubleshooting

The ADAM-5000 series uses hardware self-test and software diagnosis to monitor system problems. Also included is a watchdog timer that monitors the microprocessor. If the system crashes, the watchdog automatically resets the system. Node ID setting is easily accomplished by setting a DIP switch on the front of the system.

Easy Installation and Networking

The ADAM-5000 series can be easily mounted on a DIN-rail or on a panel. Signal connections, network modifications and maintenance are simple and quick. Building a multi-drop network only requires a single twisted pair of wires.

Proven for Industrial Environments

The ADAM-5000 series can operate in industrial environments at temperatures between -10 and 70°C, and can use unregulated power sources between 10 and 30 V_{DC}. These units are protected against accidental power supply reversals. A 3-way isolation design (I/O, power & communication) prevents ground loops and reduces the effect of electrical noise in the system.

Extensive Software Support

The ADAM-5000 series is supported by most standard process controls and HMI software. .NET Class LIB is provided for use with Windows applications. OPC drivers provide links to a wide range of HMI/SCADA software packages such as InTouch, FIX and ICONICS. Advantech data acquisition software and Advantech Studio SCADA/HMI software are both tightly integrated with the ADAM-5000 systems.

DIN-rail Mounting
   Installed on industrial standard DIN-rails

Panel/Wall Mounting
   Flat surface system mounting

Node ID Setting
   8-pin dip switch configuration

Connection
   Pre-wired plug-in terminals with I/O modules

Simple & Low Cost Network

Computer System

Ethernet

Data Gateway

RS

RS

Input   Output
Digital I/O

Output   Input
Digital I/O   RTD

Input
Thermocouple mV V mA

Input   Output
Digital I/O

RS
Modbus/RTU

Repeater

Input
Thermocouple mV V mA

Output
mA V

Input
Thermocouple mV V mA

Input   Output
Digital I/O

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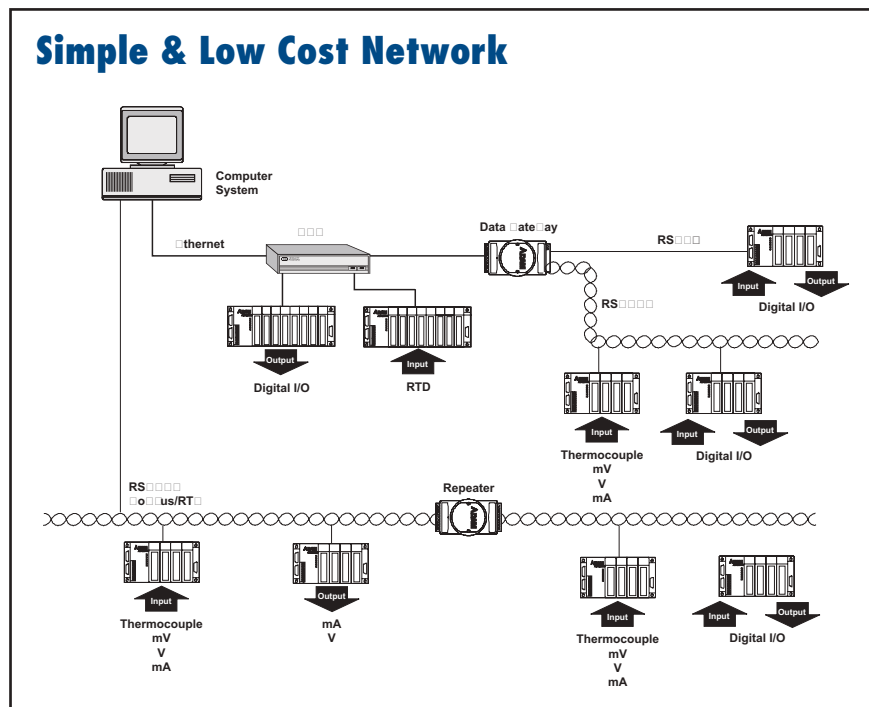
ADAM-5000 Controller Selection Guide

NEW

System	ADAM-5510M ADAM-5510KW	ADAM-5510E	ADAM-5510/TCP ADAM-5510KW/TCP	ADAM-5510E/TCP ADAM-5510EKW/TP	ADAM-5560CE ADAM-5560KW
CPU	80188				Intel Atom Z510P 1.1 GHz
RAM	640 KB				1 GB DDR2 SDRAM
Flash ROM	256 KB				-
Flash Memory	256 KB				-
Flash Disk	1 MB				-
OS	ROM-DOS				WinCE
Control Software	ADAM-5510M: Borland C ADAM-5510KW: KW SoftLogic	Borland C	ADAM-5510/TCP: Borland C ADAM-5510KW/TCP: KW SoftLogic	ADAM-5510E/TCP: Borland C ADAM-5510EKW/TP: KW SoftLogic	ADAM-5560CE: C/C++ and .NET ADAM-5560KW: KW SoftLogic
Real-time Clock	Yes				
Watchdog Timer	Yes				
COM1	RS-232	RS-232/485	RS-232	RS-232/RS-485	RS-232/485
COM2	RS-485				
COM3 (Programming)	RS-232 (TX, RX, GND)				RS-232/485
COM4	RS-232/485				
I/O Slots	4	8	4	8	7
Power Consumption	4 W				17 W
Isolation — Communication	2,500 V_{DC} (COM2 RS-485)				2,500 V_{DC} (COM2 RS-485) 1,500 V_{DC} (COM1, COM3, COM4 RS-485)
Isolation — Communication Power	3,000 V_{DC}				
Isolation — I/O Module	3,000 V_{DC}				
Diagnosis — Status Display	Power, CPU, Communication, Battery				Power, User Define
Diagnosis — Self Test	Yes, while ON				
Diagnosis — Software Diagnosis	Yes				
Communication — Interface	RS-232/485		Ethernet (RJ-45)		Ethernet (2 x RJ-45)
Communication — Speeds	1,200 bps ~ 115.2 kbps		10/100 Mbps		10/100 Mbps
Communication — Max. Distance	4,000 feet (1.2 km)		100 m		100 m
Communication — Data Format	N, 8, 1, 1		-	-	-
Communication — Max. Nodes	32	32	256 for Ethernet, 32 for RS-485	256 for Ethernet, 32 for RS-485	256 for Ethernet, 32 for RS-485
Communication — Protocol	User Defined, Modbus/RTU	User Defined, Modbus/RTU	User Defined, Modbus/RTU, Modbus/TCP	User Defined, Modbus/RTU, Modbus/TCP	Modbus/RTU, Modbus/TCP
Communication — Remote I/O	Modbus Device				
Communication — Power Requirements	10 ~ +30 V_{DC}				
Environment — Operating Temperature	-10 ~ 70°C (14 ~ 158°F)				0 ~ 55°C (32 ~ 131°F)
Environment — Storage Temperature	-25 ~ 85°C (-13 ~ 185°F)				
Environment — Humidity	5 ~ 95%				
Dimension (mm)	231 x 110 x 75	355 x 110 x 75	231 x 110 x 75	355 x 110 x 75	355 x 110 x 75
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1 WebAccess+ Solutions
2 Machine Automation
3 Energy Automation
4 Building Automation Systems
5 Automation Software
6 Operator Panels
7 Automation Panel PCs
8 Industrial Panel Computers & Panel PC
9 Industrial Monitors
10 Industrial Wireless Solutions
11 Industrial Ethernet Solutions
12 Serial Device Servers and IP Gateways
13 Serial Communication Cards
14 Embedded Automation Computers
15 PACs
16 Compact PCI Systems
17 M2M I/O Modules
18 RS-485 I/O Modules

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ADAM-5000 I/O Module Selection Guide

System	ADAM-5000/485	ADAM-5000E	ADAM-5000L/TCP	ADAM-5000/TCP
CPU	80188	80188	RISC CPU	
RAM	-	-	4 MB	
Flash ROM (User AP)	-	-	512 KB	
Flash Memory (Data Storage)	-	-	-	
Flash Disk	-	-	-	
OS	-	-	real-time OS	
Timer BIOS	-	-	-	
Real-time Clock	-	-	-	
Watchdog Timer	Yes			
I/O Slots	4	8	4	8
Power Consumption	3 W		4.0 W	5.0 W
Isolation — Communication	2,500 V_{DC}	3,000 V_{DC}	RS-485: 1,500 V_{DC}	
Isolation — Communication Power	3,000 V_{DC}			
Isolation — I/O Module	3,000 V_{DC}			
Diagnosis — Status Display	Power, CPU, Communication		Power, CPU, Error Diagnostic, Communication	
Diagnosis — Self Test	Yes, while ON			
Diagnosis — Software Diagnosis	Yes			
Communication — Interface	RS-232/485 (2-wire)	RS-232/485 (2-wire)	Ethernet	
Communication — Speeds (bps)	1,200, 2,400, 4,800, 9,600, 19.2 K, 38.4 K, 57.6 K, 115.2 K	1,200, 2,400, 4,800, 9,600, 19.2 K, 38.4 K, 57.6 K, 115.2 K	10 M, 100 M	
Communication — Max. Distance	4,000 feet (1.2 km)	4,000 feet (1.2 km)	100 m without repeater	
Communication — Data Format	Advantech protocol: N, 8, 1 Modbus protocol: N, 8, 1 N, 8, 2 E, 8, 1 O, 8, 1	Advantech protocol: N, 8, 1 Modbus protocol: N, 8, 1 N, 8, 2 E, 8, 1	TCP/IP	
Communication — Max. Nodes	128	128	Depend on IP address	
Communication — Protocols	ADAM ASCII/Modbus Protocol	ADAM ASCII/Modbus Protocol	Modbus/TCP	
Communication — Remote I/O	-	-	20 nodes Modbus devices	
Communication — Power Requirements	+10 ~ +30 V_{DC}			
Environment — Operating Temperature	-10 ~ 70°C (14 ~ 158°F)			
Environment — Storage Temperature	-25 ~ 85°C (-13 ~ 185°F)			
Environment — Humidity	5 ~ 95%			
Dimension (mm)	231 x 110 x 75	355 x 110 x 75	231 x 110 x 75	355 x 110 x 75
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Analog Input/Output Modules

Vertrieb durch **AMC**

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Module		ADAM-5013	ADAM-5017	ADAM-5017P	ADAM-5017UH	ADAM-5018
Analog Input	Resolution	16 bit	16 bit	16 bit	12 bit	16 bit
	Input Channel	3	8	8	8	7
	Sampling Rate	10 (total*)	10 (total*)	10 (total*)	200K**	10 (total*)
	Voltage Input	-	±150 mV, ±500 mV ±1 V, ±5 V, ±10 V	±150 mV, ±500 mV ±15V, ±10V, ±5 V, ±1 V 0 ~ 150mV, 0 ~ 500mV 0 ~ 1V, 0 ~ 5V, 0 ~ 10V 0 ~ 15V	±10 V, 0 ~ 10 V	±15 mV, ±50 mV ±100 mV, ±500 mV ±1 V, ±2.5 V
	Current Input	-	±20 mA	±20 mA, 4 ~ 20mA	0 ~ 20 mA, 4 ~ 20 mA	±20 mA
	Direct Sensor Input	Pt or Ni RTD	-	-	-	J, K, T, E, R, S, B
Isolation		3,000 V$_{DC}$	3,000 V$_{DC}$	3,000 V$_{DC}$	3,000 V$_{DC}$	3,000 V$_{DC}$
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*Sampling rate value depends on used channel number.
Example: Using 5 channels on ADAM-5017, sampling rate for each used channel will be 10/5 = 2 samples/second.
**The sampling rate vary with the controller.

Module		ADAM-5018P	ADAM-5024	ADAM-5050	ADAM-5051/ ADAM-5051D/ ADAM-5051S	ADAM-5052	ADAM-5053S
Analog Input	Resolution	16 bit	-	-	-	-	-
	Input Channel	7	-	-	-	-	-
	Sampling Rate	10 (total*)	-	-	-	-	-
	Voltage Input	±15 mV, ±50 mV ±100 mV, ±500 mV ±1 V, ±2.5 V	-	-	-	-	-
	Current Input	4 ~ 20 mA	-	-	-	-	-
	Direct Sensor Input	J, K, T, E, R, S, B	-	-	-	-	-
Analog Output	Output Channels	-	4	-	-	-	-
	Resolution	-	12 bit	-	-	-	-
	Voltage Output	-	0 ~ 10 V	-	-	-	-
	Current Output	-	0 ~ 20 mA 4 ~ 20 mA	-	-	-	-
Digital Input and Digital Output	Digital Input Channels	-	-	16 DI/O (bit-wise selectable)	16 (ADAM-5051) 16w/LED (5051D/5051S)	8 w/LED	32
	Digital Output Channels	-	-		-	-	-
Isolation		3,000 V$_{DC}$	3,000 V$_{DC}$	-	2,500 V$_{DC}$ (5051S)	5,000 V$_{RMS}$	2,500 V$_{DC}$
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*Sampling rate value depends on used channel number.
Example: Using 6 channels on ADAM-5017, sampling rate for each used channel will be 12/6 = 2 samples/second.

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ADAM-5000 I/O Module Selection Guide

Digital Input/Output Modules

Module		ADAM-5055S	ADAM-5056/ ADAM-5056D	ADAM-5056S/ ADAM-5056SO	ADAM-5057S	ADAM-5060
Digital Input and Digital Output	Digital Input Channels	8 w/LED	-	-	-	-
	Digital Output Channels	8 w/LED	16 (ADAM-5056) 16 w/LED (ADAM-5056D)	16 w/LED	32	6 relay (2 form A/4 form C)
Isolation		2,500 V_{DC}	-	2,500 V_{DC}	2,500 V_{DC}	-
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Module		ADAM-5069	ADAM-5080	ADAM-5081	ADAM-5090/ ADAM-5091	ADAM-5095
Digital Input and Digital Output	Digital Input Channels	-	-	-	-	-
	Digital Output Channels	8 power relay (form A)	-	-	-	-
Counter (32-bit)	Channels	-	4	4/8	-	-
	Input Frequency	-	0.3 ~ 1000 Hz max. (frequency mode) 5000 Hz max. (counter mode)	5 Hz ~ 1 MHz max. (frequency mode) 1 MHz max. (counter mode)	-	-
	Mode	-	Frequency, Up/Down Counter, Bi-direction Counter	Frequency, Counter (Up/Down, Bi-direction, Up, A/B Phase)	-	-
Communication	Channels	-	-	-	4	2
	Type	-	-	-	RS-232	CAN
Isolation		-	1,000 V_{RMS}	2,500 V_{DC}	-	1,000 V_{DC}
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Type		PAC			PC-based Controller		
System		ADAM-5560KW	ADAM-5510KW ADAM-5510EKW	ADAM-5510KW/TCP ADAM-5510EKW/TP	ADAM-5560CE	ADAM-5510/TCP ADAM-5510E/TCP	ADAM-5510M ADAM-5510E
Function	I/O Module	7-slot Micro PAC with Atom™ CPU	4/8-slot Softlogic Controller w/ RS-485	4/8-slot Softlogic Controller w/ Ethernet	7-slot PC-based Controller with Atom™ CPU	4/8-slot PC-based Controller with Ethernet	4/8-slot PC-based Controller with RS-485
Analog Input (AI)	ADAM-5013	•	•	•	•	•	•
	ADAM-5017	•	•	•	•	•	•
	ADAM-5017P	•	-	-	•	•	•
	ADAM-5017H	-	•	•	-	•	•
	ADAM-5017UH	•	-	-	•	•	•
	ADAM-5018	•	•	•	•	•	•
	ADAM-5018P	•	-	-	•	•	•
Analog Output (AO)	ADAM-5024	•	•	•	•	•	•
Digital Input (DI)	ADAM-5051	•	•	•	•	•	•
	ADAM-5051D	•	•	•	•	•	•
	ADAM-5051S	•	•	•	•	•	•
	ADAM-5052	•	•	•	•	•	•
	ADAM-5053S	•	-	-	•	-	-
Digital Output (DO)	ADAM-5056	•	•	•	•	•	•
	ADAM-5056D	•	•	•	•	•	•
	ADAM-5056S	•	•	•	•	•	•
	ADAM-5056SO	•	•	•	•	•	•
	ADAM-5057S	•	-	-	•	-	-
Digital I/O	ADAM-5050	•	•	•	•	•	•
	ADAM-5055S	•	•	•	•	•	•
Relay Output	ADAM-5060	•	•	•	•	•	•
	ADAM-5069	•	•	•	•	•	•
Counter/ Frequency	ADAM-5080	-	•	•	-	•	•
	ADAM-5081	•	-	-	•	•	•
Comm.	ADAM-5090	-	•	•	-	•	•
	ADAM-5091	•	-	-	•	-	-
	ADAM-5095	•	-	-	•	-	-
Motion	ADAM-5202	•	-	-	•	-	-
	ADAM-5240	•	-	-	•	-	-
SD	ADAM-5030	•	-	-	•	-	-

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ADAM-5000 Remote I/O System Support Table

Remote I/O System			ADAM-5000/485	ADAM-5000E	ADAM-5000L/TCP	ADAM-5000/TCP
Function	I/O Module	Description	4-slot Distributed DA&C for RS-485	8-slot Distributed DA&C for RS-485	4-slot Distributed DA&C for Ethernet	8-slot Distributed DA&C for Ethernet
Analog Input (AI)	ADAM-5013	3-ch RTD Input	•	•	•	•
	ADAM-5017	8-ch AI	•	•	•	•
	ADAM-5017P	8-ch AI w/ Independent Input Range	•	•	•	•
	ADAM-5017H	8-ch high Speed (1K) AI	•	•	•	•
	ADAM-5017UH	8-ch Ultra high Speed (200K) AI	•	•	•	•
	ADAM-5018	7-ch Thermocouple Input	•	•	•	•
	ADAM-5018P	7-ch Thermocouple Input w/ Independent Input Range	•	•	•	•
Analog Output (AO)	ADAM-5024	4-ch AO	•	•	•	•
Digital Input (DI)	ADAM-5051	16-ch DI	•	•	•	•
	ADAM-5051D	16-ch DI w/ LED	•	•	•	•
	ADAM-5051S	16-ch Isolated DI w/ LED	•	•	•	•
	ADAM-5052	8-ch Isolated DI w/ LED	•	•	•	•
Digital Output (DO)	ADAM-5056	16-ch DO	•	•	•	•
	ADAM-5056D	16-ch DO w/ LED	•	•	•	•
	ADAM-5056S	16-ch Isolated DO w/ LED	•	•	•	•
	ADAM-5056SO	16-ch Source Type Isolated DO w/ LED	•	•	•	•
Digital I/O	ADAM-5050	16-ch Universal Digital I/O	•	•	•	•
	ADAM-5055S	16-ch Isolated Digital I/O w/ LED	•	•	•	•
Relay Output	ADAM-5060	6-ch Relay Output	•	•	•	•
	ADAM-5069	8-ch Power Relay Output w/ LED	•	•	•	•
Counter/ Frequency	ADAM-5080	4-ch Counter/Frequency	•	•	•	•
	ADAM-5081	4-ch High Speed Counter/Frequency	•	•	•	•

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ADAM-5560CE
ADAM-5560KW

7-slot PC-based Controller with Intel® Atom™ CPU

7-slot Micro PAC with Intel® Atom™ CPU

NEW

Features

- Integrated VGA port for local display of HMI software
- Can be operated with or without display/ keyboard/ mouse
- Remote monitoring through Web Server
- Remote maintenance via FTP Server
- Supports .NET class library in Windows CE
- Supports IEC-61131-3 SoftLogic Control Software
- Supports Modbus/RTU (Master/Slave) and Modbus/TCP (Server/Client)
- Supports SD Storage I/O Module
- Remote I/O expansion
- Supports ADAM-5000 I/O Modules

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RoHS COMPLIANT 2002/95/EC CE FCC

Introduction

ADAM-5560 is a Programmable Automation Controller designed for control tasks which require Industrial PC computing performance with a PLC's robustness. The ADAM-5560 offers an Intel Atom CPU along with control specific features such as watchdog timer, battery backup RAM and deterministic I/O. The ADAM-5560KW features 5 standard IEC 61131-3 programming languages in Windows CE, so PLC users can develop control strategies with their own familiar programming languages. The powerful Multiprog KW Software and stable ProConOS have caused the ADAM-5560KW to become the best choice for a Programmable Automation Controller on the market today. Besides, the ADAM-5560CE offers an open platform that helps users to develop their own program using the common eVC and .NET programming environments to build compact and reliable control solutions. With the optional HMI Software and built-in VGA port, users no longer need to build additional SCADA PC's into their applications. This compact and powerful PAC is ideal for a variety of applications ranging from machine automation to SCADA applications.

Specifications

Control System

- **CPU** — Intel Atom Z510P
- **I/O Capacity** — 7 slots
- **LED Indicators** — Power, User defined
- **Memory** — 1 GB DDR2 SDRAM
  1 MB Battery Backup
  1 x CompactFlash® Card (Internal, 1GB)
- **Operating System** — Windows® CE5.0
- **Real-time Clock** — Yes
- **Watchdog Timer** — Yes
- **Control Software** — ADAM-5560CE: eVC and .NET library
  ADAM-5560KW: KW Multiprog (development tool)
  ProConOS (runtime Kernel)

Communications

- **Comm. Protocol** — Modbus/RTU and Modbus/TCP
- **Medium** — 2 x 10/100 Base-T w/ RJ-45
  4 x RS-485 w/ DB9

Protection

- **Communication** — RS-485 Isolation 1.5kV for COM1,COM3 and COM4
  RS-485 Isolation 2.5kV for COM2
- **Power Reversal** — Yes

Power

- *** Power Consumption** — 17w @ 24 V$_{DC}$ (Not include I/O modules)
- *** Power Input** — 12 ~ 24 V$_{DC}$, ± 20%

General

- **Certification** — CE, FCC Class A
- **Connectors** — 1 x RS-232/485 (COM1)
  1 x RS-485(COM2)
  1 x RS-232/485(COM3)
  1 x RS-232/485(COM4)
  2 x USB 2.0 ports (KB/Mouse via USB Ports)
  1 x VGA (1024 x 768 Resolution)
- **Dimensions** — 355 x 110 x 75 mm
- **Enclosure** — ABS+PC
- **Mounting** — DIN-rail, wall mount (panel mount)
- **Plug-in Screw Terminal** — Accepts 0.5 mm² to 2.5 mm², 1 – #12 or
  2 - #14 to #22 AWG

Environment

- **Humidity** — 5% to 95%, non-condensing
- **Operating Temperature** — 0 ~ 55°C (32 ~ 131°F)
- **Storage Temperature** — -25 ~ 85°C (-13 ~ 185°F)

Ordering Information

- **ADAM-5560CE** — 7-slot PC-based Controller with Intel Atom CPU
- **ADAM-5560KW** — 7-slot Micro PAC with Intel Atom CPU
- **ADAM-5030** — 2xSD slots and 2xUSB 2.0

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17 M2M I/O Modules
18 RS-485 I/O Modules

ADAM-5510 Series

4/8 slots PC-based Controller

Features

- Supports Modbus/RTU, Modbus/TCP Master and Slave function libraries
- Windows-based utility
- Optional support C Programming and IEC-61131-3 standard
- Complete set of I/O modules
- Built-in real-time clock and watchdog timer
- ROM-DOS operating system
- 4 serial communication ports
- Optional support Ethernet Interface with network function, such as Web Server, FTP Server and Email Alarm.
- 4 or 8 I/O slot expansion

ADAM-5510E ADAM-5510

RoHS COMPLIANT 2002/95/EC   CE FCC

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Introduction

The ADAM-5510 Series are ideal for PC-based data acquisition and control applications. They are compact, controllers with an Intel x86- based CPU running Datalight ROM-DOS. Built-in battery backup SRAM is the best choice for complex logic or data storage applications. For professional C/C++ programmers, the ADAM-5510 Series application programs may be written and compiled in Borland C++ 3.0, and downloaded to the controller.

For user who familiar with PLC programing environment, we provide the option for customer to use the KW softlogic which supports 5 standard IEC 61131-3 programming languages, including LD/FB/SFC/IL/ST.

Specifications

Control System

- **CPU** — 80188, 16-bit microprocessor
- **I/O Slots** — Optional 8 or 4 slots
- **LED Indicators** — Power, CPU, communications and battery
- **Memory** — Flash disk: 1 MB (960 KB for user applications)
  Flash memory: 256 KB
  Flash ROM: 256 KB
  RAM: 640 KB (up to 384 KB with battery backup)
- **Memory (Softlogic version)** — Flash disk: 512KB
  Flash memory: 768KB
  Flash ROM: 256KB
  RAM: 640KB SRAM, 32KB with battery backup (ADAM-5510KW)
  RAM: 768KB SRAM, 17KB with battery backup (ADAM-5510KW/TCP,ADAM-5510EKW/TP)
- **Operating System** — ROM-DOS (MS-DOS 6.22 Compatible)
- **Real-time Clock** — Yes
- **Watchdog Timer** — Yes

Serial Communication

- **Max. Nodes** — 256 (in RS-485 daisy-chain network)
- **Distance** — 1.2 km (4,000 feet)
- **Speed** — 1,200 bps ~ 115.2 kbps (9600, 19200, 38400 bps for Softlogic version)
- **Isolation** — 2500 V_{DC} (COM2 only)

Ethernet Communication

- **Medium** — Cat.5 cable with RJ-45 connector
- **Distance** — 100 m
- **Speed** — 10/100Base-T

Power

- **Power Consumption** — 4 W @ 24 V_{DC} (not including I/O modules)
- **Power Input** — Unregulated 10 ~ 30 V_{DC}
- **Isolation** — 3000 V_{DC}
- **Reverse Protection** — Yes

Software

- **ROM DOS version** — C library for Borland C++ 3.0
- **Softlogic version** — Development tool : KW Multiprog
  Runtime kernel : ProConOS

General

- **Certifications** — CE, FCC Class A
- **Connectors** — COM1 : DB9-M
  COM2 : Screw terminal(RS-485)
  COM3 : DB9-F (RS-232/Programming)
  COM4 : DB9-M (RS-232/485)
  Power : Screw terminal
  LAN : RJ-45 (option)
- **Dimensions** — 4-slot: 231 x 110 x 75 mm
  8-slot: 355 x 110 x 75 mm
- **Enclosure** — ABS+PC
- **Mounting** — DIN-rail, stack, wall

Environment

- **Humidity** — 5 ~ 95%, non-condensing
- **Operating Temperature** — -10 ~ 70°C (14 ~ 158°F)
- **Storing Temperature** — -25 ~ 85°C (-13 ~ 185°F)
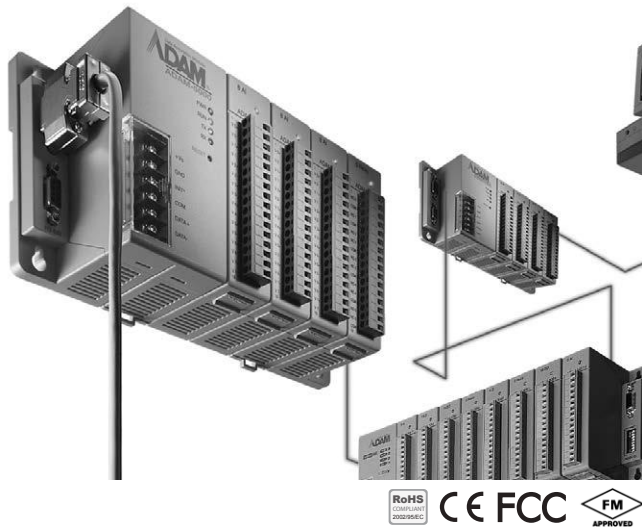
Ordering Information

- **ADAM-5510M** — 4-slot PC-based Controller
- **ADAM-5510E** — 8-slot PC-based Controller
- **ADAM-5510/TCP** — 4-slot PC-based Controller with Ethernet
- **ADAM-5510E/TCP** — 8-slot PC-based Controller with Ethernet
- **ADAM-5510KW** — 4-slot Softlogic Controller
- **ADAM-5510KW/TCP** — 4-slot Softlogic Controller with Ethernet
- **ADAM-5510EKW/TP** — 8-slot Softlogic Controller with Ethernet
- **MPROG-PRO535E** — KW Multiprog Pro v5.35 (128k bytes I/O, Win7 support)

AMC   **ADVANTECH Premier Partner**

ADAM-5000/485
ADAM-5000E

4-slot Distributed DA&C System for RS-485

8-slot Distributed DA&C System for RS-485

1 WebAccess+ Solutions
2 Machine Automation
3 Energy Automation
4 Building Automation Systems
5 Automation Software
6 Operator Panels
7 Automation Panel PCs
8 Industrial Panel Computers & Panel PC
9 Industrial Monitors
10 Industrial Wireless Solutions
11 Industrial Ethernet Solutions
12 Serial Device Servers and IP Gateways
13 Serial Communication Cards
14 Embedded Automation Computers
15 PACs
16 Compact PCI Systems
17 M2M I/O Modules
18 RS-485 I/O Modules

Features

- RS-485 communication for easy installation and networking
- 4 or 8 slots for up to 128 points data monitoring card control in one module
- Extensive software support, includes windows DLL drivers, OCX drivers, OPC server and popular HMI/SCADA software drivers
- Seamlessly integrated with easy-to-use ADAMView data acquisition software
- Supports ADAM ASCII protocol or Modbus®/RTU protocol
- Supports Modbus/RTU protocol with user-defined Modbus address

Vertrieb durch
AMC
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RoHS COMPLIANT 2002/95/EC   CE FCC   FM APPROVED

Introduction

The ADAM-5000/485 and ADAM-5000E systems conform to the EIA RS-485 communication standard. This is the industry's most widely used, balanced, bidirectional transmission line standard. RS-485 was specifically developed for industrial applications to transmit and receive data at high rates over long distances.

Specifications

Control System

CPU	16-bit 80188 microprocessor
I/O Slots	ADAM-5000/485: 4 ADAM-5000E: 8
LED Indicators	Power, CPU, communications
Watchdog Timer	1.6 sec. (System)

Communications

Command Format	ASCII command/response protocol, Modbus/RTU
Communication Distance	RS-485: 1.2 km (4000 feet)
Data Format	Asynchronous. 1 start bit, 8 data bits, 1 stop bit, no parity
Network Protocols	Programming link: RS-232 (3-wire: TX, RX, GND) Communication: RS-485 (2-wire)
Reliability Check	Communication error checking with checksum
Max. Nodes	128 (in RS-485 daisy-chain network)
Speeds (kbps)	1.2, 2.4, 4.8, 9.6, 19.2, 38.4, 57.6, and 115.2

Power

Power Consumption	3 W @ 24 Vdc (ADAM-5000/485) (not including I/O modules) 4.0 W @ 24 Vdc (ADAM-5000E) (not including I/O modules)
Power Input	Unregulated 10 ~ 30 V_{DC}

Software

- **Driver Support Windows DLL, OPC Server, Wonderware InTouch, Intellution, iFIX, Citect, Advantech Studio, ADAMView**
- **C and .NET Class Library**

Protection

Communication Line Isolation	2,500 V_{DC} (ADAM-5000/485) 3,000 V_{DC} (ADAM-5000E)
I/O Module Isolation	3,000 V_{DC}
Transient Protection	RS-485 communication lines, power input
Power Reversal Protection	Yes

General

Certification	CE, FM
Connectors	1 x DB9-M/DB9-F/screw terminal for RS-485 (communication) 1 x DB9-F for RS-232 (configuration) 1 x Screw-terminal for power input
Dimensions (WxHxD)	4-slot: 231 x 110 x 75 mm 8-slot: 355 x 110 x 75 mm
Enclosure	ABS+PC
Mounting	DIN-rail, wall, rack (with mounting kit)

Environment

Humidity	5 ~ 95%, non-condensing
Operating Temperature	-10 ~ 70°C (14 ~ 158°F)
Storing Temperature	-25 ~ 85°C (-13 ~ 185°F)

Ordering Information

- **ADAM-5000/485**   4-slot Distributed DA & C System for RS-485
- **ADAM-5000E**   8-slot Distributed DA & C System for RS-485

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ADAM-5000L/TCP
4-slot Distributed DA&C System for Ethernet

ADAM-5000/TCP
8-slot Distributed DA&C System for Ethernet

ADAM-5000/TCP | ADAM-5000L/TCP

RoHS COMPLIANT 2002/95/EC CE FCC

Features

- ARM 32-bit RISC CPU
- 10/100Base-T auto-negotiation high-speed communication port
- Supports Modbus/TCP for easy integration
- Supports UDP event handling function
- Up to 100 m communication distance w/o repeater
- Allows remote configuration via Ethernet
- Allows concurrent access for 8 host PCs
- 4 I/O slots for up to 64 points and 8 I/O slots for up to 128 points data monitoring and control
- 1500 V_{DC} isolation for Ethernet communication
- Built-in watchdog timer for system auto-reset
- Windows utility
  - I/O modules configuration and calibration
  - Network auto searching
  - Data stream setting
  - Current status monitoring and alarm trigger
- Provides C and .NET class library to develop applications

Introduction

The ADAM-5000L/TCP and ADAM-5000/TPC are both Ethernet-based I/O systems. Without a repeater, the ADAM-5000L/TCP and ADAM-5000/TCP can cover a communication distance up to 100 m. This allows remote configuration via Ethernet and eight PCs can simultaneously access the data. The ADAM-5000L/TCP and ADAM-5000/TCP are the solutions for easy configuration and efficient management. It is an ideal and cost-effective solution for eAutomation architecture.

Specifications

Control System

- **CPU** — 32-bit ARM RISC
- **I/O Slots** — ADAM-5000L/TCP: 4
  ADAM-5000/TCP: 8
- **Memory** — Flash ROM: 512 KB
  RAM: 4 MB
- **Operating System** — Real-time OS
- **LED Indicators** — Power (3.3 V, 5 V)
  CPU
  Communication (Link, Active, 10/100 Mbps, Tx, Rx)
  Battery

Communications (Ethernet)

- **Data Transfer Rate** — Up to 100 Mbps
- **Event Response Time** — < 5 ms
- **Interface** — 1 x 10/100Base-T (RJ-45)
- **Wiring** — UTP, category 5 or greater

Communications (Serial)

- **Comm. Distance** — RS-485: 1.2 km (4000 feet)
  RS-232: 15 m
- **Comm. Protocol** — Modbus/RTU
- **Data Transfer Rate** — Up to 115.2 kbps
- **Interface** — 1 x DB9-M for RS-485
  1 x DB9-F for RS-485
  1 x DB9-F for RS-232
- **Max. Nodes** — 12 (in RS-485 daisy-chain network for Remote I/O connection)

Power

- **Power Consumption** — 4.0 W @ 24 Vdc (ADAM-5000L/TCP)
  (not including I/O modules)
  5.0 W @ 24 Vdc (ADAM-5000/TCP)
  (not including I/O modules)
- **Power Input** — Unregulated 10 ~ 30 V_{DC}

Software

- **C and .NET Class Library**
- **Windows Utility** — Network setting, I/O configuration & calibration, data stream, alarm setting
- **Modbus/TCP OPC Server**

Protection

- **Communication Line Isolation** — 3.000 V_{DC}
- **I/O Module Isolation** — 3.000 V_{DC}
- **LAN Communication** — 1.500 V_{DC}
- **Overvoltage Protection** — Yes
- **Power Reversal Protection** — Yes

General

- **Certification** — CE, FCC class A
- **Connectors** — 1 x DB9-M/DB9-F/screw terminal for RS-485 (communication)
  1 x DB9-F for RS-232 (internal use)
  1 x Screw-terminal for power input
  1 x RJ-45 for LAN
- **Dimensions (W x H x D)** — ADAM-5000L/TCP: 231 x 110 x 75 mm
  ADAM-5000/TCP: 355 x 110 x 75 mm
- **Enclosure** — ABS+PC
- **Mounting** — DIN-rail, wall

Environment

- **Humidity** — 5 ~ 95%, non-condensing
- **Operating Temperature** — - 10 ~ 70°C (14 ~ 158°F)
- **Storage Temperature** — - 25 ~ 85°C (-13 ~ 185°F)

Ordering Information

- **ADAM-5000L/TCP** — 4-slot Ethernet-based Distributed DA & C System
- **ADAM-5000/TCP** — 8-slot Ethernet-based Distributed DA & C System

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ADAM-5013
ADAM-5017
ADAM-5017P

3-ch RTD Input Module

8-ch Analog Input Module

8-ch Analog Input Module with Independent Input Range

1 WebAccess+ Solutions
2 Machine Automation
3 Energy Automation
4 Building Automation Systems
5 Automation Software
6 Operator Panels
7 Automation Panel PCs
8 Industrial Panel Computers & Panel PC
9 Industrial Monitors
10 Industrial Wireless Solutions
11 Industrial Ethernet Solutions
12 Serial Device Servers and IP Gateways
13 Serial Communication Cards
14 Embedded Automation Computers
15 PACs
16 Compact PCI Systems
17 M2M I/O Modules
18 RS-485 I/O Modules

ADAM-5013 RoHS COMPLIANT 2002/95/EC CE FCC

ADAM-5017 RoHS COMPLIANT 2002/95/EC CE FCC FM APPROVED

ADAM-5017P RoHS COMPLIANT 2002/95/EC CE FCC

Specifications

General
- **Certification** CE
- **Connectors** 1 x Plug-in screw terminal (# 14 ~ 22 AWG)
- **Enclosure** ABS+PC
- **Power Consumption** 1.1 W (max.)

RTD Input
- **Accuracy** ±0.1% or better
- **Bandwidth** 13.1 Hz @ 50 Hz
  15.72 Hz @ 60 Hz
- **Channels** 3
- **CMR @ 50/60 Hz** 150 dB
- **Input Connections** 2, 3 or 4 wire
- **Input Impedance** 2 MΩ
- **Input Type** PT100 or Ni RTD
- **NMR @ 50/60 Hz** 100 dB
- **Resolution** 16-bit
- **RTD Types and Temperature Ranges**
  IEC RTD 100 ohms

Pt	-100°C	to	+100°C	a=0.00385
Pt	0°C	to	+100°C	a=0.00385
Pt	0°C	to	+200°C	a=0.00385
Pt	0°C	to	+600°C	a=0.00385

  JIS RTD 100 ohms

Pt	-100°C	to	+100°C	a=0.00392
Pt	0°C	to	+100°C	a=0.00392
Pt	0°C	to	+200°C	a=0.00392
Pt	0°C	to	+600°C	a=0.00392

  Ni RTD

Ni	-80°C	to	+100°C
Ni	0°C	to	+100°C

- **Sampling Rate** 10 samples/sec. (total)
- **Span Drift** ±0.01°C/°C
- **Zero Drift** ±0.015°C/°C

Protection
- **Isolation Voltage** 3000 V$_{DC}$

Ordering Information
- **ADAM-5013** 3-ch RTD Input Module

Specifications

General
- **Certification** CE, FM
- **Connectors** 1 x Plug-in screw terminal (# 14 ~ 22 AWG)
- **Enclosure** ABS+PC
- **Power Consumption** 1.25 W (max.)

Analog Input
- **Accuracy** Voltage mode: ±0.1% or better
  Current mode: ±0.2% or better
- **Bandwidth** 13.1 Hz @ 50 Hz
  15.72 Hz @ 60 Hz
- **Channels** 8 differential
- **CMR @ 50/60 Hz** 92 dB min.
- **Input Impedance** Voltage: 2 MΩ
  Current: 120Ω (Build-in 120 Ω resistor for Current input)
- **Input Range** ±150 mV, ±500 mV, ±1 V, ±5 V, ±10 V; ±20 mA
- **Resolution** 16-bit
- **Sampling Rate** 10 samples/sec. (total)
- **Span Drift** ±25 PPM/°C
- **Zero Drift** ±6 μV/°C

Protection
- **Isolation Voltage** 3,000 V$_{DC}$
- **Fault and Overvoltage Protection** Withstands overvoltage up to ±35 V

Note: The voltage difference between any two pins must not exceed ±15 V

Ordering Information
- **ADAM-5017** 8-ch Analog Input Module

Specifications

General
- **Certification** CE, FCC Class A
- **Connectors** 1 x Plug-in terminal block (#14 ~ 22 AWG)
- **Enclosure** ABS+PC
- **Power Consumption** 1.25 W (max.)

Analog Input
- **Accuracy** Voltage mode : ±0.1% or better
  Current mode : ±0.2% or better
- **Channels** 8 (differential, each channel can be configured with different range)
- **CMR @ 50/60 Hz** 92 dB min.
- **Input Impedance** Voltage: 800K Ω
  Current: 120 Ω (Build-in 120 Ω. resistor for Current Input)
  for Current Input)
- **Input Range** 0 ~ 150 mV, 0 ~ 500 mV, 0 ~ 1 V, 0 ~ 5 V, 0 ~ 10 V, 0 ~ 15 V, ±150 mV, ±500 mV, ±1 V, ±5 V, ±10 V, ±15 V, ±20 mA, 4 ~ 20 mA
- **Resolution** 16-bit
- **Sampling Rate** 10 samples/sec. (total)
- **Span Drift** ±25 ppm/°C
- **Zero Drift** ±6 μV/°C
- **High Common Mode** 200 V$_{DC}$

Protection
- **Over Voltage Protection**
- **Built-in TVS/ESD Protection**
- **Isolation Voltage** 3,000 V$_{DC}$

Note: Does not support ADAM-5510KW series

Ordering Information
- **ADAM-5017P** 8-ch Analog Input Module w/ Ind. Input Range

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8-ch Ultra High Speed Analog Input Module

7-ch Thermocouple Input Module
7-ch Thermocouple Input Module with Independent Input Range

Vertrieb durch **AMC**
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ADAM-5017UH   RoHS COMPLIANT 2002/95/EC   CE FCC

ADAM-5018   RoHS COMPLIANT 2002/95/EC   CE FCC   FM APPROVED

ADAM-5018P   RoHS COMPLIANT 2002/95/EC   CE FCC

Specifications

General
- **Certification**   CE
- **Connectors**   1 x Plug-in screw terminal (# 14 ~ 22 AWG)
- **Enclosure**   ABS+PC
- **Power Consumption**   2.2 W (max.)

Analog Input
- **Accuracy**   ±0.1% or better
- **Bandwidth**   200 kHz
- **Channels**   8 differential
- **Differential Non-linear ±1 LSB**
- **Input Impedance**   Voltage: 2 MΩ
  Current: 120 Ω (Build-in)
- **Integral Non-linear**   ±1 LSB
- **Input Range**   ±10 V, +0 ~ 10 V, 0 ~ 20 mA, +4 ~ 20 mA
- **Low pass filter**   Configured by User
- **Resolution**   12-bit
- **Sampling Rate**   Depends on base unit
  ADAM-5000/485 & 5000E:
  100 Samples/sec max (Total): one ADAM-5017UH installed
  ADAM-5000/TCP & 5000L/TCP:
  100 Samples/sec max (Total) :one ADAM-5017UH installed
  ADAM-5510 :
  200K Samples/sec max (Single Channel): one ADAM-5017UH installed
  ADAM-5550 & ADAM-5560:
  1K Samples/sec max(single channel): one ADAM-5017UH installed
  *Depending on the performance of client server or controller
- **Signal Input Bandwidth**   200 kHz for both voltage and current inputs

Protection
- **Isolation Voltage**   3,000 V$_{DC}$

Note:
1) The voltage difference between any two pins must not exceed 15 V
2) Distinct range settings allowed on each channel
Note: Not support ADAM-5510KW series

Ordering Information
- **ADAM-5017UH**   8-ch Ultra High Speed Analog Input Module

Specifications

General
- **Certification**   CE, FM
- **Connectors**   1 x Plug-in screw terminal (# 14 ~ 22 AWG)
- **Enclosure**   ABS+PC
- **Power Consumption**   0.63 W (max.)

Thermocouple Input
- **Accuracy**   ±0.1% or better
- **Bandwidth**   13.1 Hz @ 50 Hz
  15.72 Hz @ 60 Hz
- **Channels**   7 differential
- **CMR @ 50/60 Hz**   92 dB min
- **Input Impedance**   2 MΩ
- **Input Range**   ±15 mV, ±50 mV, ±100 mV, ±500 mV, ±1 V, ±2.5 V, ±20 mA
- **Input Type**   mV, V, mA, thermocouple
- **Resolution**   16-bit
- **Sampling Rate**   10 samples/sec. (total)
- **Span Drift**   ±25 PPM/°C
- **Zero Drift**   ±6 µV/ °C
- **T/C Type and Temperature Range**

J	0°	~	760°C
K	0°	~	1,370°C
T	-100°	~	400°C
E	0°	~	1,000°C
R	500°	~	1,750°C
S	500°	~	1,750°C
B	500°	~	1,800°C

Protection
- **Fault and Overvoltage Protection**   Withstands overvoltage up to ±35 V
- **Isolation Voltage**   3,000 V$_{DC}$

Ordering Information
- **ADAM-5018**   7-ch Thermocouple Input Module
- **ADAM-5018SK**   ADAM-5018 with CJC kit/ external

Specifications

General
- **Certification**   CE, FCC class A
- **Connectors**   1 x Plug-in screw terminal (# 14 ~ 22 AWG)
- **Enclosure**   ABS+PC
- **Power Consumption**   0.63 W (max.)

Thermocouple Input
- **Accuracy**   Voltage mode: ±0.1% or better
  Current mode: ±0.2% or better
- **Bandwidth**   13.1 Hz @ 50 Hz
  15.72 Hz @ 60 Hz
- **Channels**   7 (differential, each channel can be configured with different range)
- **CMR @ 50/60 Hz**   92 dB min
- **Input Impedance**   20 MΩ. (Build-in 120 Ω Register for Current Input)
- **Input Range and Types**
  Thermocouple

J	0	~	760°C
K	0	~	1,370°C
T	-100	~	400°C
E	0	~	1,000°C
R	500	~	1,750°C
S	500	~	1,750°C
B	500	~	1,800°C
Current	±20 mA, 4 ~ 20 mA		
Voltage	±15 mV (0.2%), ±50 mV, ±100 mV, ±500 mV ±1 V, ±2.5 V		

- **Resolution**   16-bit
- **Sampling Rate**   10 samples/sec. (total)
- **Span Drift**   ±25 PPM/°C
- **Zero Drift**   ±6 µV/°C
- **High Common Mode**   200 V$_{DC}$

Protection
- **Fault and Overvoltage Protection**   Withstands overvoltage up to ±35 V
- **Isolation Voltage**   3,000 V$_{DC}$
- **Filter function**   Yes
- **Built-in TVS/ESD Protection**

Note: Not support ADAM-5510KW series

Ordering Information
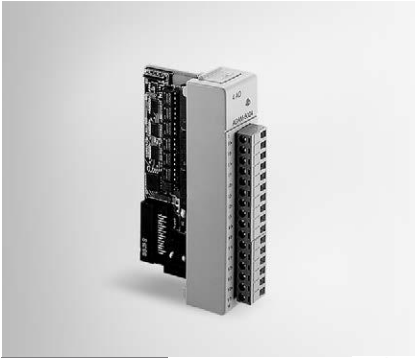- **ADAM-5018P**   7-ch Thermo. Input Module w/ Ind. Input Range

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ADAM-5024
ADAM-5050
ADAM-5051/D/S

4-ch Analog Output Module

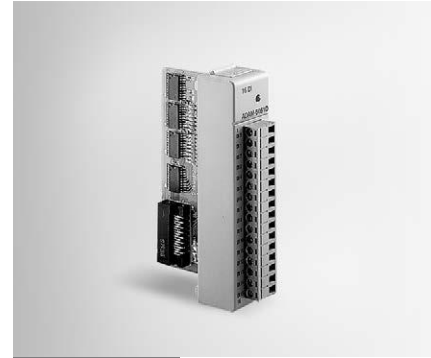**16-ch Universal Digital I/O Module**

16-ch Digital Input Module

ADAM-5024

ADAM-5050

ADAM-5051
ADAM-5051D
ADAM-5051S

Specifications

General
- **Certification**   CE, FM
- **Connectors**   1 x Plug-in screw terminal
                            (# 14 ~ 22 AWG)
- **Enclosure**   ABS+PC
- **Power Consumption**   2.9 W (max.)

Analog Output
- **Accuracy**   ±0.1% of FSR for current
                            output
                            ±0.2% of FSR for voltage
                            output
- **Channels**   4
- **Current Load
  Resistor**   0 ~ 500 Ω (source)
- **Output Type**   mA, V
- **Output Range**   0 ~ 20 mA, 4 ~ 20 mA,
                            0 ~10 V
- **Programmable
  Output Slope**   0.125 ~ 128.0 mA/sec.
                            0.0625 ~ 64.0 V/sec.
- **Resolution**   12-bit
- **Resolution**   ±0.015% of FSR
- **Span Temperature
  Coefficient**   ±25 PPM/°C
- **Zero Drift**   Voltage: ±30 µV/°C
                            Current: ±0.2 µA/°C

Protection
- **Isolation Voltage**   3,000 V_{DC}

Ordering Information
- **ADAM-5024**   4-ch Analog Output
                            Module

Specifications

General
- **Certification**   CE, FM
- **Connectors**   1 x Plug-in screw terminal
                            (# 14 ~ 22 AWG)
- **Enclosure**   ABS+PC
- **Power Consumption**   1.2 W (max.)

Digital I/O
- **Channels**   16
- **Channel I/O Type**   Bit-wise selectable by DIP
                            switch
- **Digital Input**   Dry Contact:
                            Logic level 0: close to GND
                            Logic level 1: open
                            Wet Contact:
                            Logic level 0: 2 V max.
                            Logic level 1: 4 ~ 30 V
- **Digital Output**   Open collector to 30 V,
                            100 mA and 450 mW max.
                            load
- **Power Dissipation**   300 mW for each channel

Ordering Information
- **ADAM-5050**   16-ch Universal Digital
                            Input/Output Module

Specifications

General
- **Certification**   CE
- **Connectors**   ADAM-5051/5051D: 1 x
                            Plug-in screw terminal
                            (# 14 ~ 22 AWG)
                            ADAM-5051S: 1 x Plug-in
                            screw terminal (# 14 ~ 28
                            AWG)
- **Enclosure**   ABS+PC
- **LED Indicators**
  ADAM-5051D   On: Input logic level 1
                            Input floating
                            Off: Input logic level 0
  ADAM-5051S   On: Active
                            Off: Inactive
- **Power Consumption**   ADAM-5051: 0.53 W
                            (max.)
                            ADAM-5051D: 0.84 W
                            (max.)
                            ADAM-5051S: 0.8 W
                            (max.)

Digital Input
- **Circuit Type**   Pull-up current: 0.5 mA
                            (Source Type) -only for
                            ADAM-5051/5051D
- **Channels**   16
- **Input Voltage**   ADAM-5051/5051D:
                            30 V max
                            ADAM-5051S: 50 V max
- **Logic Level**
  ADAM-5051/5051D   Logic level 0: 1 V max.
                            Logic level 1: 3.5 ~ 30 V
  ADAM-5051S   Logic level 0: 3 V max.
                            Logic level 1: 10 ~ 50 V

Protection (Only for ADAM-5051S)
- **Optical Isolation**   2,500 V_{DC}
- **Overvoltage
  Protection**   70 V_{DC}

Ordering Information
- **ADAM-5051**   16-ch Digital Input Module
- **ADAM-5051D**   16-ch Digital Input Module
                            w/ LED
- **ADAM-5051S**   16-ch Isolated Digital Input
                            Module w/ LED

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ADAM-5052
ADAM-5053S
ADAM-5055S

8-ch Isolated Digital Input Module

32-ch Isolated Digital Input Module

16-ch Isolated Digital I/O Module with LED

ADAM-5052	ADAM-5053S	ADAM-5055S

Specifications

General
- **Certification** — CE, FM
- **Connectors** — 1 x Plug-in screw terminal (# 14 ~ 22 AWG)
- **Enclosure** — ABS+PC
- **Power Consumption** — 0.27 W (max.)

Digital Input
- **Channels** — 8
- **Input Resistance** — 3 kΩ/0.5 W
- **Logic Level** — Logic level 0: 1 V max
  Logic level 1: 3.5 ~ 30 V

Protection
- **Isolation Voltage** — 5000 V$_{RMS}$

Ordering Information
- **ADAM-5052** — 8-ch Isolated Digital Input Module

Specifications

General
- **Certification** — CE, FCC class A
- **Connector** — 40 pin
- **Enclosure** — ABS+PC
- **Power Consumption** — 1 W (max.)

Digital Input
- **Channels** — 32
- **Channel I/O Type** — DI
  24 V$_{DC}$ (Sink/Source)

Logic Level
- **Wet Contact** — Logic level 0: 10 V max
  Logic level 1: 19 ~ 35 V

Protection
- **Isolation Voltage** — 2,500 V$_{DC}$
- **Overvoltage Protection** — 35 V$_{DC}$

Note: only for ADAM-5550 & 5560 Series

Ordering Information
- **ADAM-5053S** — 32-ch Digital Input Module
- **ADAM-3920** — 20-pin Flat Cable Wiring Board
- **PCL-10220** — 40-pin IDC to two 20-pin IDC cable, 1 m

Specifications

General
- **Certification** — CE
- **Connectors** — 1 x Plug-in screw terminal (# 14 ~ 28 AWG)
- **Enclosure** — ABS+PC
- **LED Indicators** — On: Active
  Off: Inactive
- **Power Consumption** — 0.68 W (max.)

Digital I/O
- **Channels** — 16
- **Channel I/O Type** — 8 DO, 8 DI
- **Digital Input** — Dry contact:
  Logic level 0: open
  Logic level 1: close to GND
  Wet contact:
  Logic level 0: 3 V max.
  Logic level 1: 10 ~ 50 V
- **Digital Output** — Open collector to 40 V
  200 mA max. load
- **Power Dissipation** — Channel : 1 W max.
  Total : 2.2 W
  (8 channels)

Protection
- **Isolation Voltage** — 2,500 V$_{DC}$
- **Overvoltage Protection** — 70 V$_{DC}$ (DI only)

Ordering Information
- **ADAM-5055S** — 16-ch Isolated Digital I/O Module with LED

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ADAM-5056/D/S
ADAM-5056SO
ADAM-5057S

16-ch Digital Output Module

16-ch Source-type Isolated Digital Output Module with LED

32-ch Isolated Digital Output Module

1 WebAccess+ Solutions
2 Machine Automation
3 Energy Automation
4 Building Automation Systems
5 Automation Software
6 Operator Panels
7 Automation Panel PCs
8 Industrial Panel Computers & Panel PC
9 Industrial Monitors
10 Industrial Wireless Solutions
11 Industrial Ethernet Solutions
12 Serial Device Servers and IP Gateways
13 Serial Communication Cards
14 Embedded Automation Computers
15 PACs
16 Compact PCI Systems
17 M2M I/O Modules
18 RS-485 I/O Modules

ADAM-5056 / ADAM-5056D / ADAM-5056S — RoHS COMPLIANT 2002/95/EC — CE FCC

ADAM-5056SO — RoHS COMPLIANT 2002/95/EC — CE FCC

ADAM-5057S — RoHS COMPLIANT 2002/95/EC — CE FCC

Specifications

General

- **Certification** CE, FCC class A (ADAM-5056S only)
- **Connectors**
  ADAM-5056/5056D 1 x Plug-in screw terminal (# 14 ~ 22 AWG)
  ADAM-5056S 1 x Plug-in screw terminal (# 14 ~ 28 AWG)
- **Enclosure** ABS+PC
- **LED Indicators**
  ADAM-5056D On: Output logic level 1
  Off: Output logic level 0
  ADAM-5056S On: Active
  Off: Inactive
- **Power Consumption** ADAM-5056:0.53 W (max.)
  ADAM-5056D: 0.84 W (max.)
  ADAM-5056S: 0.6 W (max.)

Digital Output

- **Channels** 16
- **Digital Output**
  ADAM-5056/5056D Open collector to 30 V, 100 mA max. load
  ADAM-5056S Open collector to 40 V, 200 mA max. load (sink)
- **Operating Voltage** ADAM-5056/5056D: 30 V max
- **Power Dissipation** 300 mW for each channel
- **Protection (Only for ADAM-5056S)**
  -Optical Isolation 2500 V_{DC}
  -Overvoltage Protection 70 V_{DC}
  -Power Dissipation 300 mW

Ordering Information

- **ADAM-5056** 16-ch Digital Output Module
- **ADAM-5056D** 16-ch Digital Output Module with LED
- **ADAM-5056S** 16-ch Sink Type Iso. DO Module w/ LED

Specifications

General

- **Certification** CE, FCC class A
- **Connectors** 1 x Plug-in screw terminal (# 14 ~ 28 AWG)
- **Enclosure** ABS+PC
- **LED Indicator** On: Active
  Off: Inactive
- **Power Consumption** 0.6 W (Max.)

Digital Output

- **Channels** 16
- **Digital Output** 10 ~ 35 V_{DC}
- **Current** 200 mA max. (per channel)
- **Power Dissipation** Channel : 1 W max.
  Total : 2.2 W

Protection

- **Optical Isolation** 2,500 V_{DC}
- **Overvoltage Protection** 70 V_{DC}

Ordering Information

- **ADAM-5056SO** 16-ch Source Type Iso. DO Module w/ LED

Specifications

General

- **Certification** CE, FCC class A
- **Connectors** 1 x 40 pin (wiring line)
- **Enclosure** ABS+PC
- **LED Indicator** On: Active
  Off: Inactive
- **Power Consumption** 1W (Max.)

Digital Output

- **Channels** 32
- **Digital Output** Must connect with 2 units of ADAM-3920R

Protection

- **Optical Isolation** 2,500 V_{DC}
- **Overvoltage Protection** 70 V_{DC}

Relay Spec. of ADAM-3920R

- **Contact Rating** 10A @ 250 V_{AC}
  10A @ 30 V_{DC}
- **Contact Resistance** 100 mΩ
- **Operation Time** 15 ms
- **Relay Type SPST** (Form A)
- **Release Time** 5 ms max
- **Life Expectancy** 1.7 x 10^5 at related load
- **Insulation Resistance** 1GΩ @ 500 V_{DC}
- **Power Input** +24 V_{DC}
- **Mounting** DIN 35 rail, wall, rack (with mounting kit)

Note: ADAM-5057S must connect with 2 units of ADAM-3920R via PCL-10220

Note: only for ADAM-5550 & 5560 Series

Ordering Information

- **ADAM-5057S** 32-ch Digital Output Module
- **ADAM-3920R** 20-pin Flat Cable Wiring Relay Board
- **PCL-10220** 40-pin IDC to two 20-pin IDC cable, 1m

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ADAM-5060
ADAM-5069

6-ch Relay Output Module

8-ch Power Relay Output Module with LED

Vertrieb durch **AMC**

AMC – Analytik & Messtechnik GmbH Chemnitz

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E-Mail: info@amc-systeme.de   Web: www.amc-systeme.de

ADAM-5060

RoHS COMPLIANT 2002/95/EC   CE FCC

ADAM-5069

RoHS COMPLIANT 2002/95/EC   CE FCC

Specifications

General

- **Certification**   CE
- **Connectors**   1 x Plug-in screw terminal (# 14 ~ 22 AWG)
- **Enclosure**   ABS+PC
- **Power Consumption**   1.8 W (max.)

Relay Output

- **Breakdown Voltage**   500 V_{AC} (50/60 Hz)
- **Channels**   2 x form A , 4 x form C
- **Contact Rating**   AC: 125 V @ 0.6 A
                                       250 V @ 0.3 A
                             DC: 30 V @ 2 A
                                       110 V @ 0.6 A
- **Insulation Resistance** 1 GΩ min. @ 500 V_{DC}
- **Relay Off Time**   2 ms
  (typical)
- **Relay On Time**   3 ms
  (typical)
- **Total Switching Time**   10 ms

Ordering Information

- **ADAM-5060**   6-ch Relay Output Module

Specifications

General

- **Certification**   CE, FCC class A
- **Connectors**   1 x Plug-in screw terminal (# 14 ~ 22 AWG)
- **Enclosure**   ABS+PC
- **LED Indicator**   On: Active
                             Off: Inactive
- **Power Consumption**   2.2 W (max.)

Relay Output

- **Breakdown Voltage**   750 V_{AC} (50/60 Hz)
- **Channels**   8 x form A
- **Contact Rating**   AC: 250 V @ 5 A
                             DC: 30 V @ 5 A
- **Insulation Resistance** 1 GΩ @ 500 V_{DC}
- **Relay On Time**   5 ms
  (typical)
- **Relay Off Time**   5.6 ms
  (typical)

Ordering Information

- **ADAM-5069**   8-ch Power Relay Output Module w/ LED

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ADAM-5080
ADAM-5081

4-ch Counter/Frequency Module

4-ch High Speed Counter/Frequency Module

1 WebAccess+ Solutions
2 Machine Automation
3 Energy Automation
4 Building Automation Systems
5 Automation Software
6 Operator Panels
7 Automation Panel PCs
8 Industrial Panel Computers & Panel PC
9 Industrial Monitors
10 Industrial Wireless Solutions
11 Industrial Ethernet Solutions
12 Serial Device Servers and IP Gateways
13 Serial Communication Cards
14 Embedded Automation Computers
15 PACs
16 Compact PCI Systems
17 M2M I/O Modules
18 RS-485 I/O Modules

Vertrieb durch **AMC**

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E-Mail: info@amc-systeme.de   Web: www.amc-systeme.de

ADAM-5080   RoHS COMPLIANT 2002/95/EC   CE FCC FM APPROVED

ADAM-5081   RoHS COMPLIANT 2002/95/EC   CE FCC

Specifications

General

▪ **Certification**	CE, FM
▪ **Connectors**	1 x Plug-in screw terminal (# 14 ~ 22 AWG)
▪ **Enclosure**	ABS+PC
▪ **Power Consumption**	1.5 W (max.)

Counter/Frequency

▪ **Counter Aux. Function**	Initial preset, hi-low alarm setting, alarm digital output mapping, overflag
▪ **Channels**	4
▪ **Input Frequency**	0.3 ~ 1,000 Hz max. (frequency mode) 5,000 Hz max. (counter mode) TTL only
▪ **Input Level**	Isolated or TTL level
▪ **Isolation Input Level**	Logic level 0: 1 V_{DC} max Logic level 1: 3.5 ~ 30 V_{DC}
▪ **Isolation Voltage**	1,000 V_{RMS}
▪ **Maximum Count**	4,294,967,295 (32 bits)
▪ **Minimum Input Current**	2 mA (isolated)
▪ **Minimum Pulse Width**	500 µs (frequency mode) 100 µs (counter mode)
▪ **Modes**	Counter (up/down, bi-direction), Frequency
▪ **Programmable Digital Filter**	1 ~ 65,000 µsec (Noise Filter Function)
▪ **TTL Input Level**	Logic level 0: 0 ~ 0.8 V_{DC} Logic level 1: 2.3 ~ 5 V_{DC}

Note: Does not support ADAM-5550 & 5560 Series

Ordering Information

▪ **ADAM-5080**	4-ch Counter/Frequency Module

Specifications

General

▪ **Certification**	CE
▪ **Connectors**	1 x plug-in screw terminal (# 14 ~ 18 AWG)
▪ **Power Consumption**	1.1 W (Max.)
▪ **Enclosure**	ABS+PC

Counter/Frequency

▪ **Channels**	4
▪ **Maximum Count**	4,294,967,295 (32 bit)
▪ **Input Frequency**	5 Hz ~ 1 MHz max. (frequency mode) 1 MHz max. (counter mode)
▪ **Input Level**	Isolated or TTL level
▪ **Minimum Pulse Width**	1µsec. (frequency mode) 1µsec. (counter mode)
▪ **Minimum Input Current**	2 mA (isolated)
▪ **Isolation Input Level**	Logic level 0: 3 V_{DC} max, Logic level 1: 10 ~ 30 V_{DC}
▪ **TTL Input Level**	Logic level 0: 0 ~ 0.8 V_{DC}, Logic level 1: 2.3 ~ 5 V_{DC}
▪ **Isolation voltage**	2,500 V_{RMS}
▪ **Modes**	Counter (up/down, bi-direction, up, A/B Phase), Frequency
▪ **Counter Aux. Function**	Initial preset, hi-low alarm setting, alarm digital output mapping, overflag
▪ **Programmable Digital Filter**	1 ~ 65,000 µsec (Noise Filter Function)

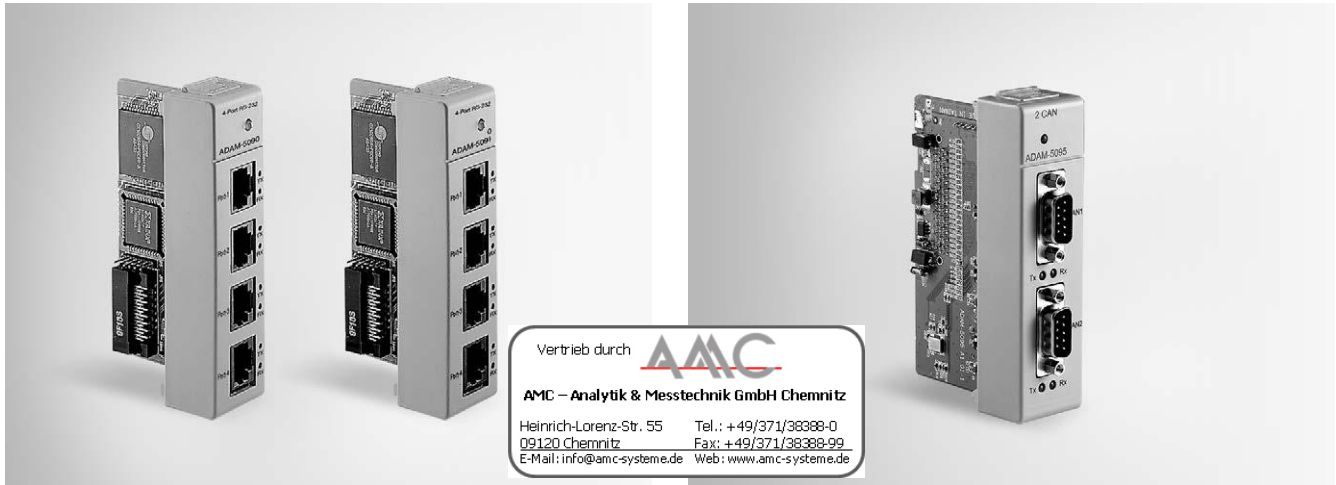**Note:** Does not support ADAM-5510 KW series

Ordering Information

▪ **ADAM-5081**	4-ch High Speed Counter/Frequency Module

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ADAM-5090/5091
ADAM-5095

4-port RS-232 Module

2-port CAN Module with Isolation Protection

| ADAM-5090 | ADAM-5091 | RoHS COMPLIANT 2002/95/EC | CE FCC |

| ADAM-5095 | RoHS COMPLIANT 2002/95/EC | CE FCC |

Specifications

General

- **Certification**   CE, FCC Class A (ADAM-5091 only), FM
- **Connectors**   4 x RJ-45
- **Enclosure**   ABS+PC
- **LED Indicators**   TX, RX (each port)
- **Power Consumption**   0.6 W (max.)

Communications

- **Data Bits**   5, 6, 7, 8
- **Data Signals**   TxD, RxD, RTS, TS, DTR, DSR, DCD, RI, GND
- **Parity**   none, even, old
- **Ports**   4
- **UARTs**   1 x 16C954 (128-byte FIFO)
- **Speed**   50 ~ 115.2 kbps
- **Stop Bits**   1, 1.5, 2
- **Support standard Com Port with Share interrupt (ADAM-5091)**

Note:
For ADAM-5510 Series, ADAM-5510KW Series, and ADAM-5511 only (ADAM-5090)
For ADAM-5550 Series (ADAM-5091)

Ordering Information

- **ADAM-5090**   4-port RS-232 Module
- **ADAM-5091**   4-port RS-232 Module with Share Interrupt
- **OPT1A**   1 m RJ-48 to Male DB9 Cable
- **OPT1D**   30 cm RJ-48 to Male DB9 Cable

Specifications

General

- **Certification**   CE, FCC Class A
- **Connector**   2 x DB9-M
- **Enclosure**   ABS+PC
- **LED Indicator**   TX (Yellow), RX (Green) For Each Port
- **Power Consumption**   1 W (max.)

Communications

- **CAN Controller**   SJA-1000
- **CAN Transceiver**   82C250
- **Protocol**   CAN2.0 A/B
- **Signal Support**   CAN-H, CAN-L
- **Speed**   1Mbps

Protection

- **Isolation Protection**   1,000 V_{DC}

Note:
only for ADAM-5550 series

Ordering Information

- **ADAM-5095**   2-port CAN Module with Isolation Protection

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