ADAM-5510M
ADAM-5510E

4-slot PC-based Programmable Controller

8-slot PC-based Programmable Controller

Features

- Supports Modbus/RTU Master and Slave function libraries
- Windows-based Utility
- Control Flexibility with C Programming
- Complete Set of I/O Modules
- Built-in 1.5 MB Flash and 640 KB SRAM
- Built-in Real-Time Clock and Watchdog Timer
- ROM-DOS operating system
- 4 serial communication ports
- 4 or 8 I/O slot expansion

Introduction

The ADAM-5510M AND ADAM-5510E 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-5510M AND ADAM-5510E application programs may be written and compiled in Borland C++ 3.0, and downloaded to the ADAM-5510M AND ADAM-5510E. With the power of the ADAM-5510M AND ADAM-5510E, users can easily accomplish specialized functions, which are difficult with traditional controllers. Each ADAM-5510M AND ADAM-5510E system can handle up to 4 or 8 I/O slots (up to 64 or 128 I/O points).

Specifications

Control System

- **CPU** 16-bit microprocessor
- **I/O Slots** ADAM-5510E: 8
ADAM-5510M: 4
- **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)
- **Operating System** ROM-DOS (MS-DOS 6.22 Compatible)
- **Real-time Clock** Yes
- **Watchdog Timer** Yes

Communications

- **Max. Nodes** 256 (in RS-485 daisy-chain network)
- **Transmission Distance** 1.2 km (4000 feet)
- **Transmission Speed** 1200 bps ~ 115.2 kbps

Power

- **Power Consumption** 4 W @ 24 Vdc (not including I/O modules)
Unregulated 10 ~ 30 V
- **Power Input** Unregulated 10 ~ 30 V_{DC}

Software Support

- **C Library** Borland C++ 3.0 for DOS

Protection

- **Communication Power Isolation** 3000 V_{DC}
- **Communication Line Isolation** 2500 V_{DC} (COM2 only)
- **Power Reversal Protection** Yes

General

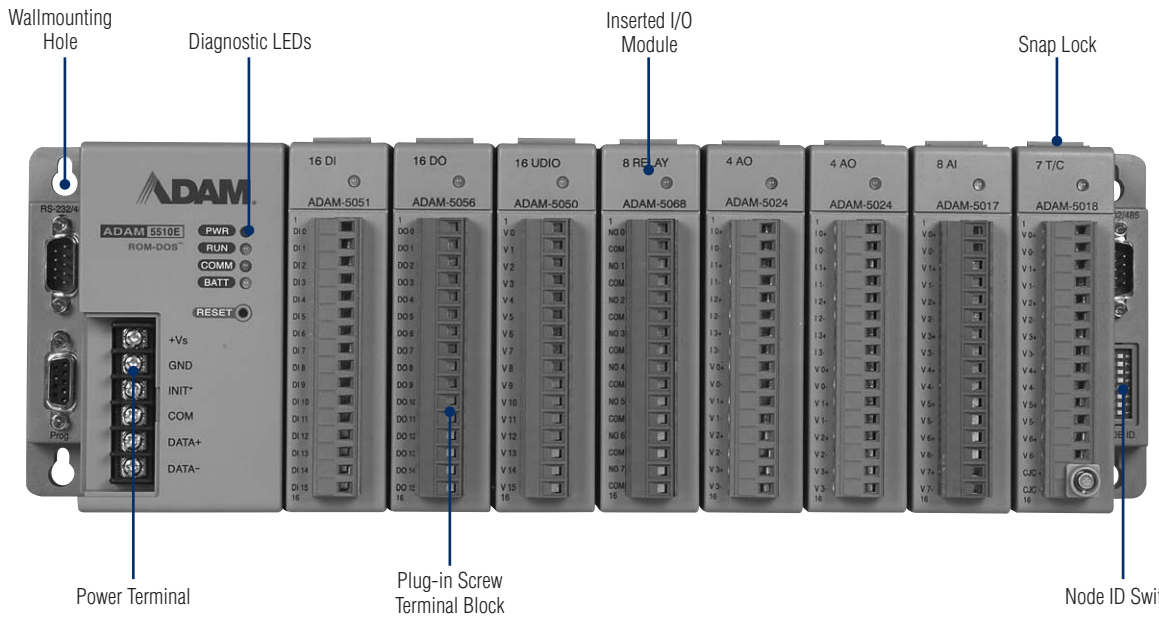
- **Certifications** CE
- **Connectors** ADAM-5510E: 1 x DB9-M for RS-232/485 (COM1)
ADAM-5510M: 1 x DB9-M for RS-232 (COM1)
1 x Screw terminal for RS-485 (COM2)
1 x DB9-F for RS-232/Programming (COM3)
1 x DB9-M for RS-232/485 (COM4)
1 x Screw-terminal for power input
- **Dimensions** 4-slot: 231 x 110 x 75 mm
8-slot: 355 x 110 x 75 mm
- **Enclosure** ABS+PC
- **Mounting** DIN 35 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 Programmable Controller
- **ADAM-5510E** 8-slot PC-based Programmable Controller



Why PC-based Control?

Today, more and more major manufacturers are gaining a competitive edge by replacing their factory floor PLC "black boxes" and utilizing the latest advances in automation control technology. One of the major drawbacks of the PLC is its proprietary nature. Not only is the PLC proprietary, but so is everything associated with it – the hardware, the operating system, the programming methods, the networks, the processors, the I/O, and more. Once you have selected a PLC supplier, you are essentially locked into their product line. This exclusivity limits how far you can expand your operations – and expand your business

– since you can only grow as far as your supplier's technology will let you. On the other hand, PC-based controllers are designed as an open structure with advanced capabilities for computing, communication and controlling. There will be no more limitation to user's further integration and expansion.

ADAM-5510M AND ADAM-5510E PC-based "C" Programmable Controller

The design of the ADAM-5510M and ADAM-5510E are based on the experience of various needs in industrial control. The ADAM-5510M and ADAM-5510E adopt a popular RS-485 bus, which can work either as a standalone unit or within a distributed control system. The user only needs to write a program in C to run on the ADAM-5510M and ADAM-5510E for a general-purpose application.

Windows-based Utility for Configuring I/O Modules and Downloading Control Program

The ADAM-5510M and ADAM-5510E utility is fully-Windows based so users can configure the I/O modules and download control program under Windows environment easily. In order to provide a convenience operation environment for former users, the Windows Utility keeps the DOS mode operation interface too.

More Data Memory and I/O Slots to Support Versatile Applications

The ADAM-5510M and ADAM-5510E offer plenty of spare memory for developing complex logic or data storage applications, such as data recording, which is difficult for traditional controllers. The ADAM-5510M and ADAM-5510E features 1.5 MB flash memory and 640 KB SRAM (up to 384 KB battery backup memory). ADAM-5510M and ADAM-5510E also support up to 4 or 8 I/O slots for I/O modules, which can provide more flexibility and I/O points for user's applications.

Supports 4 Serial Ports with Modbus/RTU Master and Slave Function Libraries

The ADAM-5510M and ADAM-5510E has four independent communication ports. That means they can simultaneously communicate with one RS-232/485 device (COM1), one RS-485 device (COM2), one RS-232 3-wire device (COM3), and one RS-232/485 device (COM4). They also support Modbus/RTU master function library for connecting Modbus remote I/O modules and Modbus/RTU slave function library for connecting to HMI/SCADA software.

Complete I/O Module and C Library Support

The ADAM-5510M and ADAM-5510E support industrial I/O modules including digital I/O, analog I/O, counter and special purpose I/O modules such as Thermocouple and RTD. It also offers well-stocked Borland C libraries, including system resources function, I/O functions, communication functions and Modbus/RTU functions. All the functions have sample programs which can save the developing time and efforts.

Multiple RS-232 Port Support

The ADAM-5090 is a 4-port RS-232 module that is equipped with 4 RS-232 ports, which make it especially suitable for bi-direction communication. It can simultaneously read/write data from other third-party devices such as barcode readers or PLCs, as long as they have an RS-232 interface. Furthermore, commands can be issued through the ADAM-5090 to control other devices. It is fully integrated with the ADAM-5510M and ADAM-5510E, and transmits data through RS-232 ports. The whole integrated system supports Modbus/RTU master function, which can connect and issue commands to control Modbus remote I/O devices by Modbus/RTU protocol.