ADAM-5510M
PC-based Programmable Controller

ADAM-5510E
8-slot PC-based Programmable Controller

Features

- Support 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 extension

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

PC-based Programmable Controller System

- **CPU** — 16-bit microprocessor
- **Memory** — 1.5 MB flash memory:
  - 256 KB system Disk
  - 256 KB flash memory
  - 1024 KB file system, 960 KB for user applications 640 KB SRAM, up to 384 KB with battery backup
- **Operating System** — ROM-DOS (MS-DOS 6.22 Compatible)
- **Real-time Clock** — Yes
- **Watchdog Timer** — Yes
- **COM1** — RS-232/485 for ADAM-5510E
  RS-232 for ADAM-5510M
- **COM2** — RS-485
- **Programming Port/COM3** — TX, RX, GND (RS-232 Interface)
- **COM4** — RS-232/485
- **I/O Capacity** — 8 Slots for ADAM-5510E
  4 slots for ADAM-5510M
- **Status Display** — Power, CPU, communication and battery
- **CPU Power Consumption** — 1.0 W

Isolation

- **Power Input** — 3000 V_{DC}
- **Communication** — 2500 V_{DC} (COM2 only)

Network

- **Medium** — RS-485 (2-wire)
- **Speeds (bps)** — 1200 up to 115.2 k
- **Maximum Nodes** — Up to 256 multi-drop system per serial port

Software Support

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

Power

- Unregulated + 10 to + 30 V_{DC}
- Protected against Power Reversal

Mechanical

- **Case** — KJW with captive mounting hardware
- **Plug-in Screw Terminal Block** — Accepts 0.5 mm^2 to 2.5 mm^2, 1 - #12 or 2 - #14 to #22 AWG
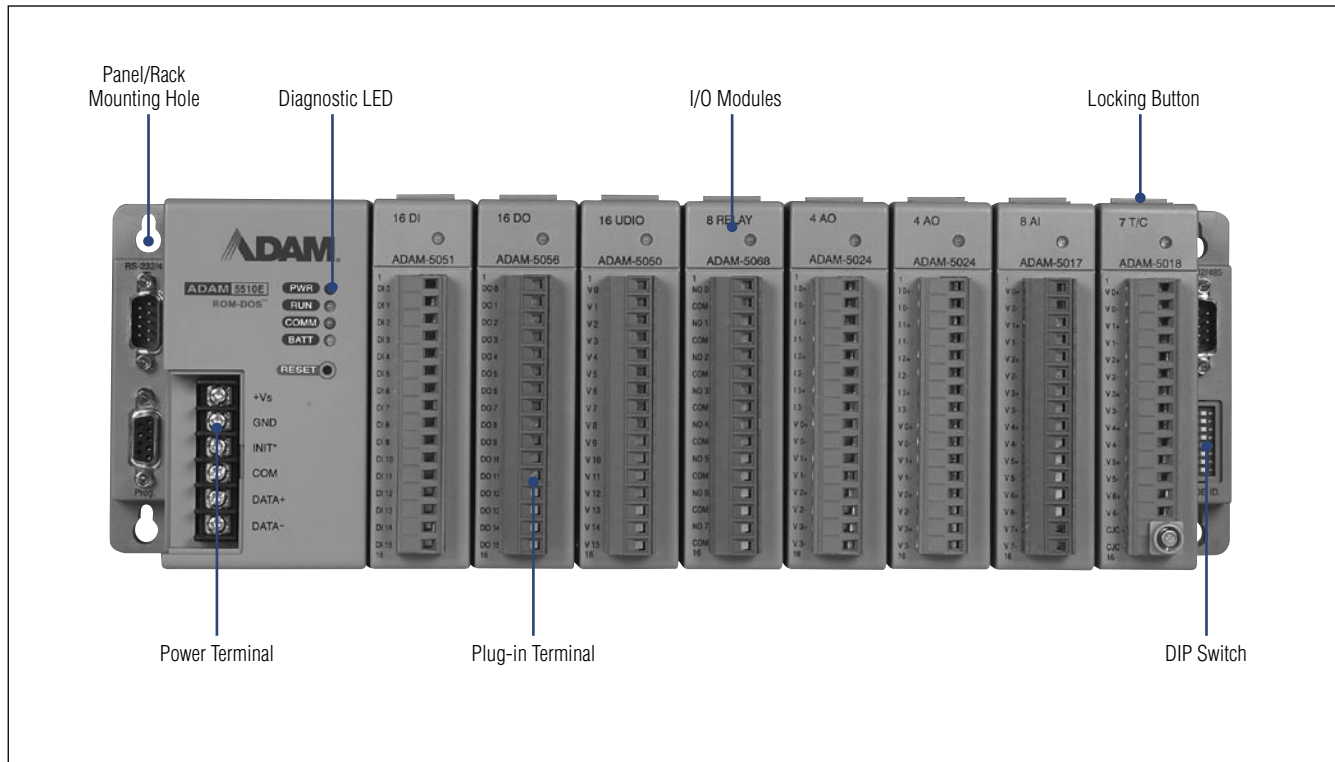
Environment

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

Ordering Information

- **ADAM-5510M** — PC-based Programmable Controller (4-slot)
- **ADAM-5510E** — 8-slot PC-based Programmable Controller
- **PCLS-OPC/MOD** — Modbus OPC Server
- **PCLS-ADAMVIEW32** — ADAMView Data Acquisition Software

Panel/Rack Mounting Hole

Diagnostic LED

I/O Modules

Locking Button

Power Terminal

Plug-in Terminal

DIP Switch

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.

Fully 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.

Support 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.