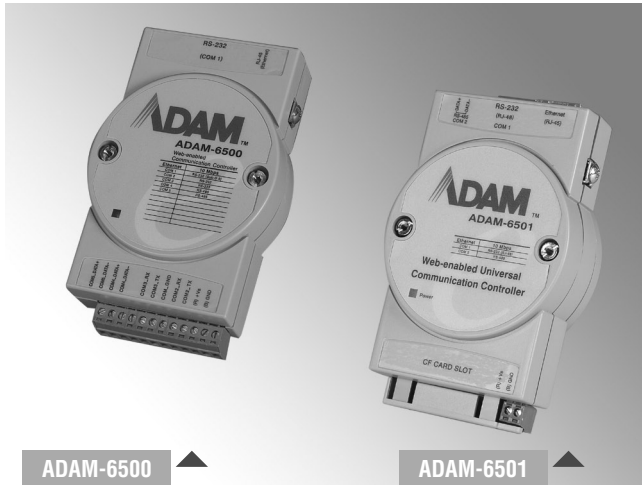


ADAM-6500 ADAM-6501

**Web-enabled Communication Controller
with Intel® StrongARM**

**Web-enabled Universal Communication
Controller with Intel® Xscale®**



ADAM-6500

ADAM-6501

CE FCC

Features

- Powerful Ethernet-enabled communication controller in a tiny package
- Built-in Windows CE .NET to run embedded Ethernet applications
- Embedded web server
- Microsoft embedded VC++ development environment supported
- Built-in CompactFlash® slot
- Built-in Flash disk for Win CE and user applications (ADAM-6500: 16 MB, ADAM-6501: 32 MB)
- Built-in real-time clock and watchdog timer
- Offers RS-232 and RS-485 series communication port (ADAM-6500: 3 x RS-232, 2 x RS-485; ADAM-6501: 1 x RS-232, 1 x RS-485)
- Automatic data flow control in RS-485 mode
- Communication speed up to 115.2 kbps
- Easy to mount on a DIN-rail or wall

Introduction

ADAM-6500 and ADAM-6501 are fully functional Ethernet-enabled controllers for industrial automation and control. They provide an ideal environment to develop applications converting RS-232/485 devices/equipment data to the Ethernet/Internet world with minimum effort. Their built-in Windows CE .NET operating system lets users run new programs produced in Microsoft embedded VC++. The Windows environment also includes a web server to allow the designer to develop web-enabled applications.

Specifications

General

- **Certifications** CE, FCC class A
- **Connectors** ADAM-6500: 1 x RJ-45 (LAN), 1 x DB9 (RS-232), Plug-in screw terminal block (RS-232/485, and power)
ADAM-6501: 1 x RJ-45 (LAN), 1 x RJ-48 (RS-232), Plug-in screw terminal blocks (RS-485 and power)
- **Enclosure** ABS
- **LED Indicators** Power, diagnostics, communications
- **Mounting** DIN 35 rail, stack, wall
- **Power Consumption** 4 W (typical)
- **Power Input** Unregulated 10 ~ 30 V_{DC} (max. 6 W)
- **Real-time Clock** Yes

System Hardware

- **CPU** ADAM-6500: 32-bit Intel® StrongARM 206 MHz
ADAM-6501: 32-bit Intel® XScale® 400 MHz
- **Flash Memory** 16 MB flash memory for ADAM-6500
32 MB flash memory for ADAM-6501
- **RAM** 64 MB SDRAM
- **Battery Backup RAM** 2MB (ADAM-6501 only)
- **Storage** 1 x CompactFlash® slot
(internal on ADAM-6500, external on ADAM-6501)

Protection

- **Power Reversal Protection**

Software

- **Operating System** Windows® CE .NET
- **System Management** Web-based remote configuration via standard browser with Java® support.
Command line configuration in console mode.
- **Watchdog Timer** Yes, programmable

Communications

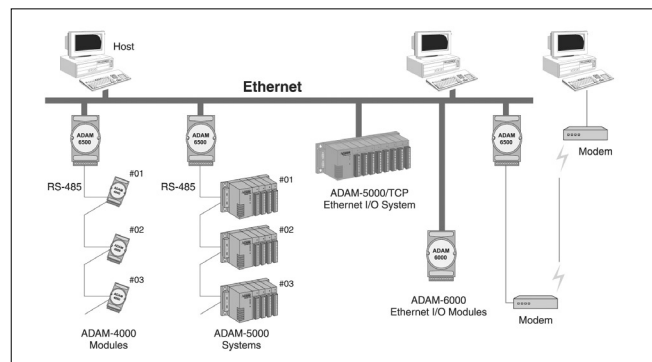
- **Default Setting** Onboard
- **Recovery**
- **LAN** ADAM-6500: 1 x 10Base-T (RJ-45)
ADAM-6501: 1 x 10/100Base-T (RJ-45)
- **Serial Ports (isolated)** ADAM-6500: 3 x RS-232, 2 x RS-485
ADAM-6501: 1 x RS-232 (RJ-48), 1 x RS-485
Speed: 115.2 kbps
- **Protocols Supported** TCP/IP, UDP

Environment

- **Humidity** 5 ~ 95% RH, non-condensing
- **Operating Temperature** 0 ~ 55° C
- **Storage Temperature** -20~ 80° C (-13 ~ 185° F)

Ordering Information

- **ADAM-6500** Web-enabled Communication Controller
- **ADAM-6501** Web-enabled Universal Communication Controller



ADAM-6500 modules installed as controllers in a typical system

Feature Details

Built-in Ethernet and RS-232/485 COM Ports

The ADAM-6500 has one Ethernet (10BASE-T), and four communication ports (3 x RS-232 and 2 x RS-485). The ADAM-6501 has one Ethernet (10/100BASE-T), one RS-232 and one RS-232/485 ports. These provide easy communication between the controller and devices in your applications, and has been designed for program downloading, debugging and linking serial devices with the Ethernet/Internet. Both ADAM-6500 and 6501 is equipped with a COM1 port (RS-232) supporting full RS-232 signals for applications such as modem connections, while the 3-pin RS-232 and RS-485 are designed as the interface for traditional RS-232/485 devices/equipment. This design allows the controller to be used in a variety of applications. For example, the user may download a data logging application into the ADAM-6500/6501's memory while the ADAM-6500/6501 is connected to a RS-485 network, and then collect the data over the network.

Built-in Real-time Clock and Watchdog Timer

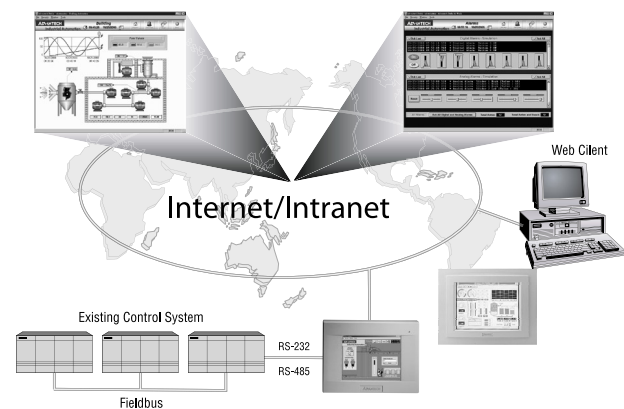
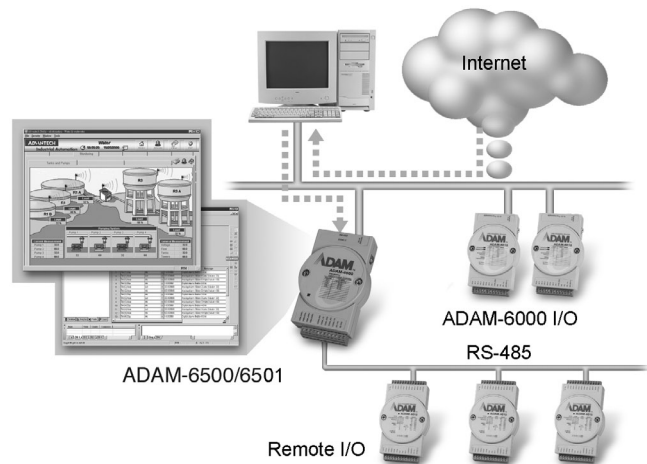
The real-time clock in the controller ensures accurate time recording when the system operates. The watchdog timer is designed to automatically reset the CPU if the system fails.

ADAM-6500/6501AS PC-Based HMI Station/SCADA

The ADAM-6500/6501AS embeds Advantech Studio into ADAM-6500/6501 hardware. So you can easily develop the required application in a desktop PC, then download it into ADAM-6500/6501AS as a cost effective, compact size SCADA/HMI station. Advantech Studio (AStudio), a powerful, integrated collection of automation tools that includes all the building blocks required to develop modern Human Machine Interfaces (HMI), and Supervisory Control and Data Acquisition System (SCADA) applications. AStudio in ADAM-6500/6501AS can run native on Windows CE.NET or in an Internet and Intranet environment. A simple drag and drop, point and click development environment mimics the most complex behavior of your live processes. AStudio is an eAutomation solution that allows designers to develop web-enabled applications.

Applications

- Distributed data acquisition and control
- Embedded control application (Advantech AStudio SCADA Software and KW Softlogic)
- Data logging applications
- Serial to Ethernet conversion
- Web-enabled data acquisition and control

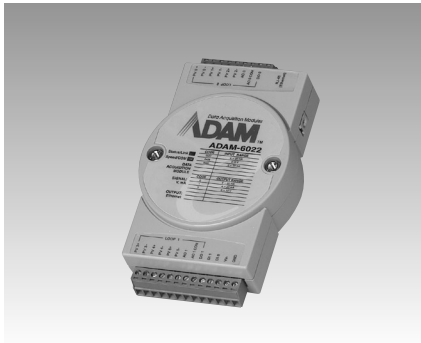


| | |
|----|-----------------------|
| 1 | Software |
| 2 | IPPC |
| 3 | TPC |
| 4 | FPM |
| 5 | ATM & AWS |
| 6 | DA&C |
| 7 | cPCI |
| 8 | ADAM-3000 |
| 9 | Motion Control |
| 10 | ICOM |
| 11 | Industrial Networking |
| 12 | UNO |
| 13 | ADAM-4000 |
| 14 | ADAM-5000 |
| 15 | ADAM-6000 |
| 16 | ADAM-8000 |
| 17 | BAS |

ADAM-6022 ADAM-6000

Ethernet-based Dual-loop PID Controller

Series Dimensions



ADAM-6022

CE FCC

Specifications

General

- **Dimensions (W x H x D)** 70 x 112 x 25 mm
- **Loop Number** 2 (3 AI, 1 AO, 1 DI, 1 DO for each control loop)
- **Power Consumption** 4 W (typical)
- **LAN** 10/100Base-T

Analog Input

- **Accuracy** $\pm 0.1\%$ or better
- **Bandwidth** 13.1 Hz @ 50 Hz
15.72 Hz @ 60 Hz
- **Channels** 6 differential
- **CMR @ 50/60 Hz** 92 dB min.
- **Resolution** 16 bits
- **Input Impedance** 20 M Ω
- **Input Range** 0 ~ 10 V_{DC}; 0 ~ 20 mA,
4 ~ 20 mA
- **Isolation Voltage** 2,000 V_{DC}
- **Sampling Rate** 10 samples/sec.
- **Span Drift** ± 25 ppm/ $^{\circ}$ C
- **Zero Drift** ± 6 μ V/ $^{\circ}$ C

Analog Output

- **Accuracy** 0.05% of FSR
- **Channels** 2
- **Drift** ± 50 ppm/ $^{\circ}$ C
- **Drive Voltage** 15 V_{DC} (current output)
- **Isolation Voltage** 2,000 V_{DC}
- **Output Range** 0 ~ 10 V_{DC}; 4 ~ 20 mA,
0 ~ 20 mA
- **Resolution** 12 bits

Digital Inputs

- **Channels** 2
- **Dry Contact:** Logic level 0: close to GND
logic level 1: open
- **Wet Contact:** Logic level 0: +3Vmax
Logic level 1: 10~30 V_{DC}

Digital Outputs

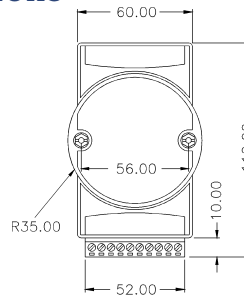
- **Channels** 2
- **Open Collector to 30 V**
100 mA max. load

Environment

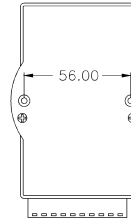
- **Humidity (Operating)** 20~95% RH, (non-cond)
- **Humidity (Storage)** 0~95% RH, (non-cond.)
- **Operating Temperature** -10~50 $^{\circ}$ C
- **Storage Temperature** -20~80 $^{\circ}$ C

Dimensions

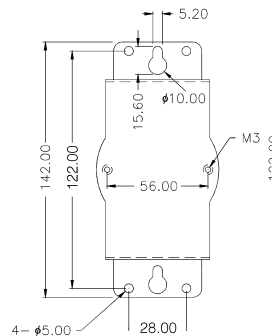
Unit: mm



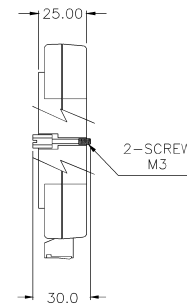
FRONT VIEW



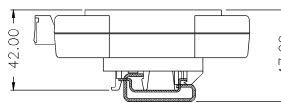
REAR VIEW



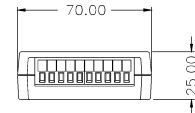
PANEL MOUNTING BRACKET



SIDE VIEW



DIN - RAIL MOUNTING ADAPTER



TOP VIEW

Ordering Information

- **ADAM-6022** Dual-loop PID Controller

Software Ordering Information

- **PCLS-OPC/MTP** Modbus/TCP OPC Server
- **AStudio-WNT/DEV** Astudio-WNI/PRO Web-enabled HMI/SCADA Software