



# NetController II

## CPU Module

- Native Ethernet IP Network Controller
- Powerful, modular CPU board for monitoring and control of both Andover Continuum I/O Modules and Infinity Inifinet distributed controllers
- High-speed networking — 4 million nodes on Ethernet
- Four programmable comm. ports for flexible interconnectivity and third party communications
- Programmable battery backup provides choice of shutdown options
- Flash for easy online software updates
- Andover Plain English (PE) language simplifies programming
- DIN rail mounting and slide-together connectors for easy installation
- Compatible with Andover Infinity hardware and CyberStation 1.8 and higher software. (CyberStation v1.74 SP2 may be used with a limited feature set.)
- Secure Ethernet communications with IPSec/IKE Encryption and hardware acceleration
- Easy configuration using embedded configuration web pages
- Support for Area Lockdown and Condition "Threat" Level based access rights
- Support for Continuum 2nd Generation XDrivers

The Andover Continuum NetController II is a redesigned version of the NetController, a high-powered Central Processing Unit (CPU) module and network manager for the Andover Continuum intelligent building system. With its 128 MB DDR SDRAM, 32 MB flash, and four programmable communications ports (including an interface to Infinity's Inifinet distributed controllers), the NetController II provides a total solution for facility-wide network communications and information management. Of the total DDR SDRAM memory, 12 MB is allocated for application and run-time data and 48 MB for personnel records.

The NetController II is compatible with Andover Continuum CyberStation software version 1.8 and higher, and includes new features such as network security, condition level, area lockdown, and email. (CyberStation v1.74 SP2 is compatible with the NetController II but is limited to the features that do not require v1.8 for support.)

### NETCONTROLLER COMPATIBLE

The NetController II has been designed to replace the original NetController. Since the form factor has not changed, the NetController II can be substituted for a NetController and plug into the same enclosure, power supply, and I/O modules as a drop-in replacement. Additionally, the NetController II supports 24 VAC power sources allowing low cost AC transformers to power the NetController II for non-I/O module applications. The NetController II can also co-exist on the same Andover Continuum system along with the original NetController.

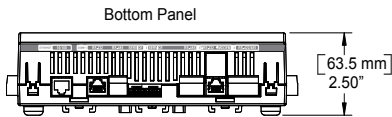
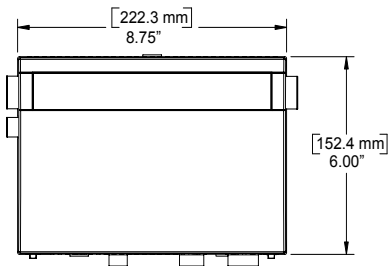
### HIGH-SPEED COMMUNICATION

The NetController II acts as the system coordinator, providing integrated global control and monitoring, history logging, and local and remote logging for both the Andover Continuum I/O modules and the RS-485 Inifinet controllers that control your individual building services — heating, ventilation, air conditioning, lighting, access control, and more. The NetController II communicates with up to 32 Andover Continuum I/O modules via Andover LON communications over a choice of RS-485 or free topology bus media. The NetController II supports expansion of up to two Inifinet networks. Each Inifinet network can contain 127 Inifinet controllers and up to 31 Inifinet ACX series access controllers or DCX 250 Inifinet display controllers.

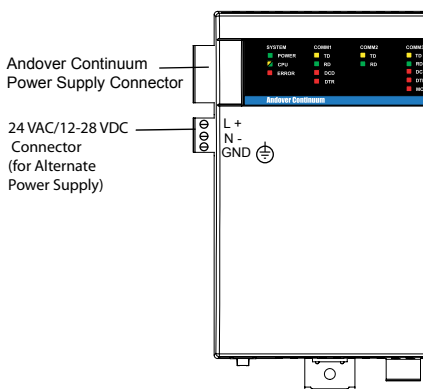
An Ethernet port also allows the NetController II to communicate with other NetControllers and Andover Continuum Workstations over a high-speed 10/100 Mbps Ethernet Local Area Network (LAN) using IP protocol. Andover Continuum workstations are capable of communicating with up to 4 million nodes on Ethernet. The Ethernet network interface is a 10/100 Ethernet with an RJ-45 connector.

The NetController II's flash memory allows you to download software revisions over Ethernet using an Andover Continuum workstation. The flash memory feature eliminates the need to perform EPROM change-outs in the field.

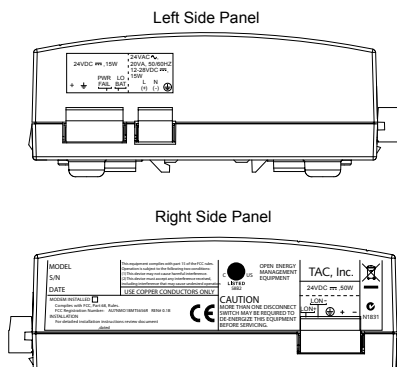
## DIMENSIONAL DRAWING



## POWER CONNECTORS



## SIDE PANELS



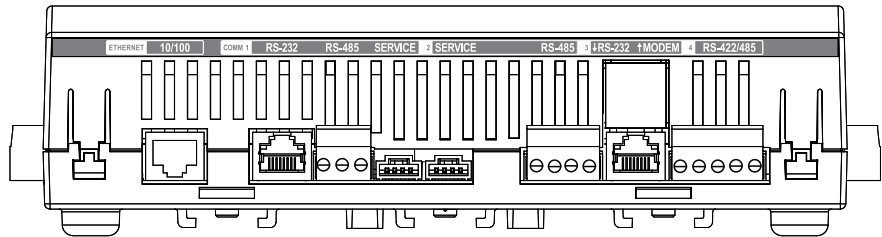
## SERIAL COMMUNICATIONS

The NetController II's four proramable communications ports can be configured as a combination of RS-422, RS-232, or RS-485 intefaces to modems, printers, and third party devices, and up to two Infinet field controller networks.

## OPTIONAL WIRELESS INFINET

The NetController II can also communicate using a wireless mesh network. Simply plug an Andover Continuum Wireless Adapter into one of the Service Ports of the NetController II with wireless compatible firmware to create a wireless mesh network that sends and receives Infinet messages.

## BOTTOM PANEL



## ANDOVER PLAIN ENGLISH PROGRAMMING

The Andover Continuum NetController II can be configured to meet the exact requirements of your application using the powerful Andover Plain English programming language. Programs are entered into the NetController II using the Andover Continuum workstation. The NetController II stores and executes the programs. Just as with Infinity, one single language is used system-wide.

## SOFTWARE CAPABILITIES

The dynamic memory of the NetController II can be allocated for any combination of programs, scheduling, alarming, reporting, and data logging. The object-oriented Andover Plain English language with intuitive keywords provides easy operation and programming. In addition, Andover Plain English's pre-defined and customized functions and powerful math capabilities reduce programming time.

## OPTIONAL AUTO-BAUD MODEM

The optional Andover Continuum modem allows the NetController II to communicate with and exchange data over standard voice grade telephone lines with speeds up to 38.4 K baud. The modem has built-in data compression and error-correction protocols, auto-dial/auto answer capabilities, and is UPS-supported.

## UPS OPERATION

The NetController II incorporates software programmable battery backup that reduces or eliminates the impact of power failure. In powerfail mode, the UPS can support the system fully running for up to 60 minutes. In addition, the NetController II can go into low-power mode in which only the DDR SDRAM and real-time clock are powered for up to 7 days.

## MODULAR DESIGN FOR SLIDE-TOGETHER CONNECTION

The NetController II features a sleek, lightweight casing designed for natural convection cooling. Built-in connectors on either side of the NetController II module allow power transmission from the power supply module and communication signals to the Andover Continuum I/O modules to feed through easy-slide connections. Built-in quick-release fasteners at the back of the module are provided for DIN rail mounting — no tools required. These fasteners also snap into a locked position for panel mounting. The NetController II module is designed for mounting in an optional NEMA 1-style Andover Continuum enclosure. (See the Andover Continuum Enclosure and Display Module System data sheet.)

# SPECIFICATIONS

## NetController II

### ELECTRICAL

#### Power

24VAC, 50/60 Hz  
12-28 VDC auto-sensing

#### Power Consumption

10 W

#### Real Time Clock

Battery-backed by UPS and internal battery

### MECHANICAL

#### Operation Environment

32°-120°F (0-49°C), 10-95% RH  
(non-condensing)

#### Dimensions

8.7"W x 6.00"L x 2.5" H  
(222.3 W x 152.4 L x 63.5 H mm)

#### Weight

1.5 lbs. (0.68 kg.)

#### Enclosure Type

UL open class, flammability rating of UL94-5V, IP 10

#### Mounting

DIN rail or wall mount using attached fasteners. (Andover Continuum NEMA 1-style enclosure available.)

### BATTERY

#### Internal Battery

NiMH, 3.6 VDC, 800 mAh

#### Battery Backup

Two 12V 7.0 Ahr sealed rechargeable batteries on the Andover Continuum UPS power supply provides 60 minutes @ 35 Watts power consumption full UPS (CPU plus I/O power); 7 day DDR SDRAM and real-time clock. Expandable by use of greater amp-hour batteries.

### COMMUNICATIONS

#### Comm. Error Checking

International Standard CRC 16

#### Ethernet LAN Interface

10/100 Ethernet; ethernet cable with RJ-45 connector.

#### Serial Comm. Interface

Four programmable ports, software configurable as printer, modem, wireless adapter, RoamIO<sub>2</sub>, or third party

system. Infinet can be configured on Ports 1 and 2.

Comm1: RS-232, RS-485, Service Port

Comm2: Service Port, RS-485

Comm3: RS-232, (optional) Modem (RJ-11 connector)

Comm4: RS-422 (L-Bus) or RS-485

#### Serial Comm. Interface Speed

Comm1: Baud rates up to 38.4K for RS-232 mode

Comm3: Baud rates up to 38.4K when configured for RS-232 or internal modem

#### Infinet Bus Length

4,000ft. (1,220 m) standard for Infinet using approved shielded, twisted pair, low capacitance cable. Infilink module allows extension to longer distances.

#### I/O Bus

ACC-LON communications. Choice of bus media, RS-485 or FTT-10A.

#### RS-485 Bus

Communications Speed: 39 K baud  
Bus Length: 2,000 ft. (610 m)

Bus media: Shielded, twisted-pair cable. 120 ohm termination required at both ends of the ACC-LON network (when modules are mounted remotely)

#### FTT-10A Bus

Communications Speed: 78 K baud  
Bus Length: Up to 8858 ft. (2700 m) for Bus Topology  
Up to 1640ft. (500 m) for Free Topology.  
Repeater required for longer distances

Bus Media: Refer to Echelon FTT-10A Free Topology documentation.

### CONNECTIONS

#### Power

5-position plug-in connector on left side of module for direct connection to Andover Continuum power supply module.

3-position connector on left side of module for direct connection to a 24 VAC or 12-28 VDC external power source.

(Both connectors cannot be used at the same time.)

#### Ethernet

RJ-45 connector for 10/100 Ethernet

#### Printer

RJ-45 connector

#### Modem

RJ-11 connector

#### I/O Bus

5-position plug-in connector on right side of module for direct connection of up to 32 Continuum I/O modules

### USER LEDS/SWITCHES

#### Status Indicator LEDs

##### SYSTEM

POWER: Power ON  
CPU: CPU Active  
ERROR: Error

##### COMM1

TD: Transmit Data  
RD: Receive Data  
DCD: Data Carrier Detect  
DTR: Data Terminal Ready

##### COMM2

TD: Transmit Data  
RD: Receive Data

##### COMM3

TD: Transmit Data  
RD: Receive Data  
DCD: Data Carrier Detect  
DTR: Data Terminal Ready  
MODEM: Indicates the MODEM is selected

(Comm Port 3 is shared: RS-232 and MODEM.)

##### COMM4

TD: Transmit Data  
RD: Receive Data

##### I/O BUS

STATUS: Indicates ACC-LON I/O bus is Online

##### ETHERNET

ACT/LINK: Indicates status of Ethernet activity and link  
10/100 Mbps: Not lit for 10 Mbps  
Orange for 100 Mbps

# SPECIFICATIONS

## NetController II (continued)

### PUSH BUTTON SWITCHES

#### Clear Memory

RESET/Clear Memory

#### Reset IP Address

(On PC board) Resets network address settings in flash memory and restores all non-volatile settings to factory defaults.

### GENERAL

#### Microprocessor

MCF5275 running at 150 MHz

#### Memory

DDR SDRAM: 128 MB

Flash: 32 MB

### AGENCY LISTINGS

FCC Class A, ICES-003, CE, C-Tick, WEEE, UL/CUL 916

Pending: UL 294, UL 1076

### MODELS

#### NC2-R-000000000

NetController II, 0 Nodes, RS-485 I/O Bus Interface

#### NC2-R-008000000

NetController II, 8 Nodes, RS-485 I/O Bus Interface

#### NC2-R-032000000

NetController II, 32 Nodes, RS-485 I/O Bus Interface

#### NC2-R-064000000

NetController II, 64 Nodes, RS-485 I/O Bus Interface

#### NC2-R-127000000

NetController II, 127 Nodes, RS-485 I/O Bus Interface

#### NC2-R-254000000

NetController II, 254 Nodes, RS-485 I/O Bus Interface

#### NC2-F-000000000

NetController II, 0 Nodes, FTT-10A I/O Bus Interface

#### NC2-F-008000000

NetController II, 8 Nodes, FTT-10A I/O Bus Interface

#### NC2-F-032000000

NetController II, 32 Nodes, FTT-10A I/O Bus Interface

#### NC2-F-064000000

NetController II, 64 Nodes, FTT-10A I/O Bus Interface

#### NC2-F-127000000

NetController II, 127 Nodes, FTT-10A I/O Bus Interface

#### NC2-F-254000000

NetController II, 254 Nodes, FTT-10A I/O Bus Interface

### OPTIONS

- H High Encryption
- X XDriver Enabled (Comm1 and Ethernet Level XDrivers enabled by default.)
- M Modem
- A Advanced Alarming (includes SNMP and Redundant Alarming)
- C Critical Security (includes Condition "Threat" Level feature)

### EXPORT CLASSIFICATION

The NetController II CPU Module is classified in ECCN 5A002 and its software package is classified in ECCN 5D002. These items are controlled by the Bureau of Industry and Security (BIS), U.S. Department of Commerce, because of their encryption functionality. BIS authorized the export and reexport of the NetController II CPU Module and its software package under License Exception ENC in CCATS # G053811.

DO NOT EXPORT THIS PRODUCT FROM THE COUNTRY OF DESTINATION.

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