AndoverControls

Infinity

⩗Eclipse CX 9400 **Central Processing Unit**

The *Infinity* CX 9400 with flash EPROM is the Central Processing Unit (CPU) board for the ⩗Eclipse family of controllers. Through its flexible, modular design, the ⩗Eclipse system allows you to to meet the high point-type and point-density needs of a specific site by mixing various combinations of user-configurable I/O modules in a *single* compact 4-I/O-slot or 8-I/O-slot rack. Along with the CX 9400 CPU module and slots for four to eight I/O modules, each ⩗Eclipse system includes a plug-in power supply module. The CX 9400 board monitors and controls these I/O modules through the ⩗Eclipse parallel backplane interface. An optional NEMA 1-style enclosure is available for wall mounting of either an ⩗Eclipse 4-I/O slot rack or a ⩗Eclipse zero-I/O slot rack (CPU and power supply only) .

The CX 9400 also acts as the system coordinator for all distributed *Infinity* Infinet controllers, providing integrated global control, history logging, local and remote alarming, and a fully menu driven user interface. Each CX 9400 contains communication ports to the Infinet field bus, RS-232/RS-485 communications to modems, printers, dumb terminals, and third-party devices, plus optional Ethernet LAN and/or Echelon LON™ networks.

The CX 9400 supports expansion for up to two Infinet networks. Each network can contain 127 Infinet controllers and up to 31 ACX series access controllers or DCX 250 display controllers.

PROGRAMMING

The CX 9400 can be configured to meet the exact requirements of your application, using the powerful *Plain English*® programming language. Programs are entered into a CX 9400 using a SX 8000 workstation, LSX 280 Lap-Top Service Tool, or dumb terminal with full screen editor. The program is then stored in, and executed by, the CX 9400.

FEATURES

- **High-Powered CPU Board for Monitoring and Control of ⩗Eclipse High Density I/O Modules**

- **High-Speed Networking — Ethernet LAN and/or Echelon LON™ Communications**

- **System Coordinator for Up to 316 Infinet Distributed Controllers**

- **Four Programmable Comm. Ports for Flexible Interconnect**

- **Flash EPROM for Easy On-Line Software Updates**

- *Plain English*® **Language Simplifies Programming**

- **Real-Time Data Logging and Trending Capabilities**

- **Programmable Battery Backup Provides Choice of Shutdown Options**

- **Optional Auto Dial/Auto Answer Modem for Remote Communications**

SOFTWARE CAPABILITIES

The dynamic memory of the CX 9400 can be allocated for any combination of *Plain English* programs, scheduling, alarming, reporting and data logging. Our object-oriented language with intuitive keywords provides easy operation and programming. In addition, *Plain English*'s pre-defined and customized functions and powerful math capabilities reduce programming time for repetitive applications.

PROGRAMMABLE COMMUNICATIONS PORTS

The CX 9400 has the power to share information between third-party systems, using its programmable communications port feature. Each of the four CX 9400 communications ports can be custom-programmed as either a RS-232 or RS-485 interface, with user-selectable baud rates, data bits, parity, flow control, and hardware handshaking. Andover Controls has developed an extensive library of third party software drivers, including tie-ins to chiller control panels, fire alarm systems, emergency generator systems, bar code readers, elevator controls, and videomatrix switchers.

FLASH MEMORY

The CX 9400's 4 or 8 mb of flash EPROM allows you to download software revisions over Ethernet or standard telephone lines using an *Infinity* SX 8000 workstation. This flash memory feature eliminates the need to perform EPROM change-outs in the field.

OPTIONAL ETHERNET LAN INTERFACE

The CX 9400 offers optional Ethernet LAN support. With this option, the CX 9400 can communicate with your other Andover network controllers and SX 8000 workstations over a high-speed 10 Mb Ethernet network (using either NetBeui, TCP/IP or Novell protocols). Three different Ethernet modules are available, supporting three different media: 10BASE-2 (thin coax) ,10BASE-T (twisted pair), or 10BASE-FL (fiber optic cable).
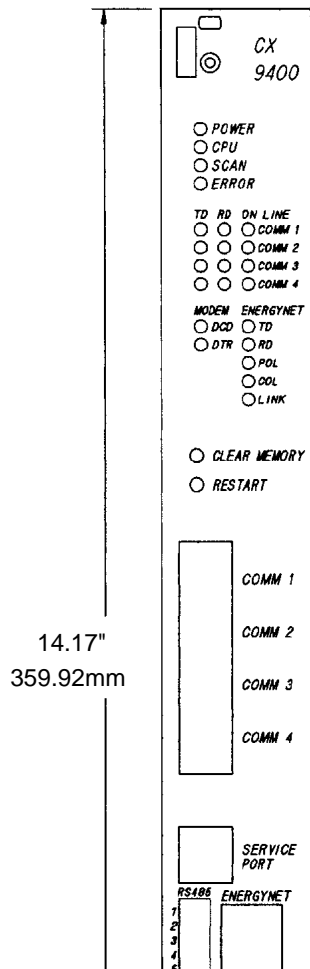
OPTIONAL ECHELON LON INTERFACE

The CX 9400's optional Echelon control module provides an open communication interface to Andover or third-party Echelon-compatible products. This Echelon port is in addition to the four communications ports mentioned above. Contact Andover Controls for more details on the Echelon interface module.

OPTIONAL AUTO-BAUD MODEM MODULE

The optional Andover Controls ⚠Eclipse modem allows the CX 9400 to communicate and exchange data over standard voice grade telephone lines with speeds up to 14.4K baud. The modem has built-in data compression and error-correction protocols, as well as auto-dial/auto-answer capabilities.

THE CX 9410

For control applications where extensive data logging and programming capabilities, higher CPU performance, greater processing speeds, and more RAM memory is needed, the CX 9410 is the perfect upgrade. The CX 9410 offers 8 Mb of RAM, 8 Mb of Flash EPROM, and a floating point math co-processor.

14.17"
359.92mm

CX
9400

○ POWER
○ CPU
○ SCAN
○ ERROR

TD RD ON LINE
○ ○ ○ COMM 1
○ ○ ○ COMM 2
○ ○ ○ COMM 3
○ ○ ○ COMM 4

MODEM ENERGYNET
○ DCD ○ TD
○ DTR ○ RD
○ POL
○ COL
○ LINK

○ CLEAR MEMORY

○ RESTART

COMM 1

COMM 2

COMM 3

COMM 4

SERVICE
PORT

RS485 ENERGYNET
1
2
3
4

SPECIFICATIONS

ELECTRICAL

Power Consumption:	16 watts max., provided through ⋀Eclipse backplane. System's total power consumption not to exceed 100 watts.
Overload Protection:	2 amp slow-blow pico fuse
Real Time Clock:	Battery-backed by UPS

MECHANICAL

Operating Environment:	32 to 120°F, (0 to 49°C), 10 to 95% (non-condensing)
Size:	1.58" W x 14.17" H x 5.67" D (40.1 W x 359.9 H x 144.0 D)mm
Weight:	1.3 lb. (.590kg)

BATTERY

Battery Backup:	Two 12V 6.5AH sealed rechargeable batteries on ⋀Eclipse power supply module programmable for 90 minutes full UPS/72 hours memory and real-time clock. Expandable by use of greater amp hour batteries. Charge time will vary. Contact Andover Controls for details.

COMMUNICATIONS

Serial Comm. Interface:	Four programmable RS-232/485 ports, software configurable as user port, printer, modem, third party system, or TankNet. Infinet can be configured on Ports 1 and 2.
Optional Ethernet LAN	
Interface Module:	10 BASE T, 10 BASE 2, 10 BASE FL
Optional Echelon LON	
Interface Module:	Free Topology (FT) Twisted Pair
Serial Comm. Speed:	300 to 19.2K baud selectable for Infinet, user terminal, and 14.4K baud for modem
Comm. Error Checking:	International Standard CRC 16
Bus Length and Media	
Infinet:	4,000 ft. (1,220m) standard for Infinet using twisted, shielded pair approved, low capacitance cable. InfiLink module allows extension to longer distances.

Optional Ethernet:	606 ft. (185m) standard for 30 nodes using 10BASE-2 thin coaxial cable. EnergyLink modules allow longer distances.
	327 ft. (100m) standard for 2 nodes using 10BASE-T unshielded twisted pair cable. EnergyLink modules allow longer distances.
	6,562 ft. (2,000m) standard for 2 nodes using 10BASE-FL fiber optic cable. EnergyLink modules allow longer distances.
Optional Echelon LON:	500m to 2700m depending on bus topology.

CONNECTIONS

Power:	Powered through 𝖬Eclipse backplane.
EnergyNet:	Female BNC coax connector for Ethernet 10BASE-2
	RJ-45 connector for Ethernet 10BASE-T
	ST-style connector for Ethernet 10BASE-FL
Echelon:	Three-position removable terminal block
Infinet, TankNet:	Twelve-positon removable terminal block
User Terminal, Printer:	RJ-45
Modem:	RJ-11 connector
Service Port:	RJ-11 connector

LED DISPLAYS

Status LEDs:	4 (POWER, CPU, SCAN, ERROR)
Comm. Activity LEDs:	12 (TD, RD, ONLINE on 4 comm ports)
Modem Activity LEDs:	2 (DCD, DTR)
Network Activity LEDs:	5 (TD, RD, PDL, COL, LINK)

MEMORY

	DRAM	Flash EPROM	Serial EEPROM
CX 9400:	4 Mb	4 Mb	4K bit
CX 9410:	8Mb	8Mb	4K bit

MODELS

CX 9400	4 Mb RAM, 127 Infinet Nodes
CX 9410	8 Mb RAM, 127 Infinet Nodes, Math Coprocessor
CX 9410	8 Mb RAM, 254 Infinet Nodes, Math Coprocessor

AGENCY LISTINGS	UL/CUL 916, 1092, FCC, CE

OPTIONS

- Ethernet Module, 10BASE-2 (Coax)
- Ethernet Module, 10BASE-T (Twisted Pair)
- Ethernet Module, 10BASE-FL (Fiber Optic)
- Echelon LON Module, Free Topology (FT) (Twisted Pair)
- XDriver Support (up to 3 commports)
- 14,4K Bps Telephone Modem (UPS Supported)
- NetBeui, TCP/IP, Novell Support
- Command Line Support
- NEMA 1-Style Enclosure for 4-Slot or Zero-Slot Rack