

## Features

- Embedded RISC Microprocessor platform
- One LON® FTT-10A port for LON device integration
- Direct, on-board I/O with six universal inputs and four digital relay outputs
- One RS-485 port for connection to open and proprietary protocol devices
- One RS-232 port for Integration or support of an optional internal modem
- Optional Web UI services to support many simultaneous users over the internet or internet via a standard web browser
- Double memory version (EC-BOS-403<sup>AX</sup>-EM) for increased device capacity (256MB RAM and 128MB Flash)
- BTL listed when BACnet driver is used. Complies with B-BC (BACnet Building Controller)

## Specifications

### Platform

- Motorola RISC 250MHz processor
- EC-BOS<sup>AX</sup> Control Engine . with direct I/O support objects
- Memory for database backup:
  - EC-BOS-403<sup>AX</sup>: 128MB SDRAM and 32MB Flash
  - EC-BOS-403<sup>AX</sup>-EM: 256MB SDRAM and 128MB Flash
- One 10/100 Mb Ethernet RJ-45 connector
- FCC Class A+ computing device

### Communications

- One 10/100 Mb Ethernet port . RJ-45 connection
- One RJ-45 connector for RS-232 port
- One RS-485 port (Up to 78.6k baud for MSTP)
- One LONWORKS port . FTT-10A with Weidmuller connector
- Optional auto-dial/auto-answer 56k modem; RJ-11 connector (uses the RS-232 port when installed)

### Operating System

- QNX® Operating System with IBM J9™ JVM Java Virtual Machine
- EC-BOS<sup>AX</sup> (Control Engine) software with I/O control objects

### Power Supply

- 120VAC, 50/60Hz (EC-BOS-403<sup>AX</sup>/403<sup>AX</sup>-EM)
- 240VAC, 50/60Hz (EC-BOS-403I<sup>AX</sup>/403I<sup>AX</sup>-EM)
- 24VA maximum
- Lead wires for hot/neutral (wire nut), stud for ground connection. EC-BOS-403I<sup>AX</sup> has two-screw terminal strip for AC power connections plus a stud for ground



EC-Net<sup>AX</sup> is a product suite developed on the Niagara<sup>AX</sup> Framework™ that provides an end-to-end building automation solution. Users can seamlessly integrate LONWORKS®, BACnet® and other standard protocols with legacy systems to provide a unified real-time controls network. The suite includes a browser-based graphical user interface allowing users to view and manipulate underlying systems without the need for dedicated workstations or client software.

EC-Net<sup>AX</sup> provides the ability to create a customized user interface that combines intuitive navigation screens with dynamic, real-time displays. Third party graphic images, jpegs, and gif images can also be used in the creation of the user interface. Unique software technology eliminates the need for page refreshes or polling for data updates, thereby minimizing required bandwidth.

EC-BOS<sup>AX</sup> products bundle this software capability in a hardware platform that can be installed in typical building control environments. EC-BOS<sup>AX</sup> connects to system field busses and provides real-time control functions as constant streams of data from individual systems are instantaneously transformed to a common object model within the EC-BOS<sup>AX</sup>. EC-BOS<sup>AX</sup> provides a fully distributed system when multiple units are networked together, which provides unsurpassed scalability and reliability. In this configuration, the Supervisor<sup>AX</sup> can be used to network EC-BOS<sup>AX</sup> controllers and manage enterprise-level control functions. The appropriate EC-BOS<sup>AX</sup> model is determined by connectivity and computing power requirements.

Distech Controls quality management system is ISO 9001:2000 certified

## Specifications (con't)

### Battery Backup

- Battery backup provided for all on-board functions including I/O
- Battery is monitored and trickle charged
- Battery maintains processor operation through power failures for a predetermined interval, then writes all data to flash memory, shuts processor down and maintains clock for a minimum of five years

### Chassis

- Housed in metal enclosure
- Intended for indoor wall mounting only
- Cooling: Internal air convection
- Dimensions: 28.0cm (11.0") W x 35.6cm (14.0") H x 6.4cm (2.5") D
- Weight: Net - 1.8kg (4lbs.), Gross - 2.3kg (5lbs.)

### Agency Listings

- UL 916
- C-UL listed to Canadian Standards Association (CSA) C22.2 No. 205-M1983 Signal Equipment+
- CE
- FCC part 15 Class A

### Environment

- Operating temp.: 0°C - 50°C (32°F - 122°F)
- Storage temp.: 0°C - 70°C (32°F - 158°F)
- Relative humidity: 5% - 95%, non-condensing

### Inputs/Outputs Specifications

- 4 form C (SPDT) relay outputs rated for 24V AC/DC @ 2A resistive
- 1 LED indicator for each relay
- 6 Universal Inputs for 10K $\Omega$  Type III (10K 4A1-International) Thermistor, 4/20mA current loop, 0 to 10V or dry contact
- 12-bit A/D converter
- Thermistor Sensor Range -23.3°C to 57.2°C (-10°F to 135°F). Input accuracy is in the range of +/-1% of span, type III thermistor curve supported
- 0 to 10V or 4/20mA accuracy is +/-2% of span, without user calibration. Uses an external resistor for current input (4 provided). Self-powered or board-powered sensors accepted
- Dry contacts (on UI) 20Hz max. frequency (25ms minimum pulse width). 3V open circuit, 200mA short-circuit current
- Board provides 20VDC @ 80mA to drive 4/20mA powered sensors
- 24VDC terminal and external resistor can be used if monitoring contacts that require higher voltages or higher current
- All I/O connections are screw terminals on 0.2" centers

### Other

- Maximum LON devices = See Special Note below
- Max MSTP devices per RS-485 port = 31 standard load; 124 ¼ load devices; requires one MSTP driver per port. Port speeds supported are:
  - 4800 baud
  - 9600 baud
  - 19,200 baud
  - 38,400 baud
  - 57,600 baud
  - 76,800 baud

## Ordering Information

### Hardware

Part #:	Description:
EC-BOS-403-AX	EC-BOS-403 <sup>AX</sup> with AX software
EC-BOS-403I-AX	International model of the EC-BOS-403 <sup>AX</sup>
EC-BOS-403-AX-EM	Extended memory version of the EC-BOS-403 <sup>AX</sup> . SDRAM increased from 128MB to 256MB and Flash increased from 32MB to 128MB
EC-BOS-403I-AX-EM	Extended memory version of the international model of the EC-BOS-403 <sup>AX</sup> . SDRAM increased from 128MB to 256MB and Flash increased from 32MB to 128MB

Note: All models above require EC-Net<sup>AX</sup> version 3.1 or higher

EC-MDM-401	Internal Modem option (factory installed only)
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### Software

Part #:	Description:
EC-BOS-403-EXPUP-AX	Extended memory part for 128Mb to 256Mb
EC-UI-SP-4XX	Web User Interface add-on
EC-EC-SP-4XX	Enterprise Connectivity Pack
EC-WP-AX-WEB	Embedded EC-Net <sup>AX</sup> Pro
EC-BOS-403-EZ	Easy-pack bundle including EC-UI-SP-4XX and EC-EC-SP-4XX
EC-BOS-403I-EZ	International easy-pack bundle including EC-UI-SP-4XX and EC-EC-SP-4XX

## Applications

Specifically designed for light commercial applications, the EC-BOS-403<sup>AX</sup> is ideally suited for users who require a compact controller that can be wall or enclosure mounted. A single EC-BOS-403<sup>AX</sup> controller can be used to support a network of devices via the LONWORKS port and auxiliary devices that can be accessed directly via onboard I/O, or through the RS-485 port, or an RS-232 port (unless used by the optional internal modem). The on board I/O can be used to monitor pulse contacts from power/demand meters, analog sensors or transducers, as well as control energy consuming devices with digital relay outputs.

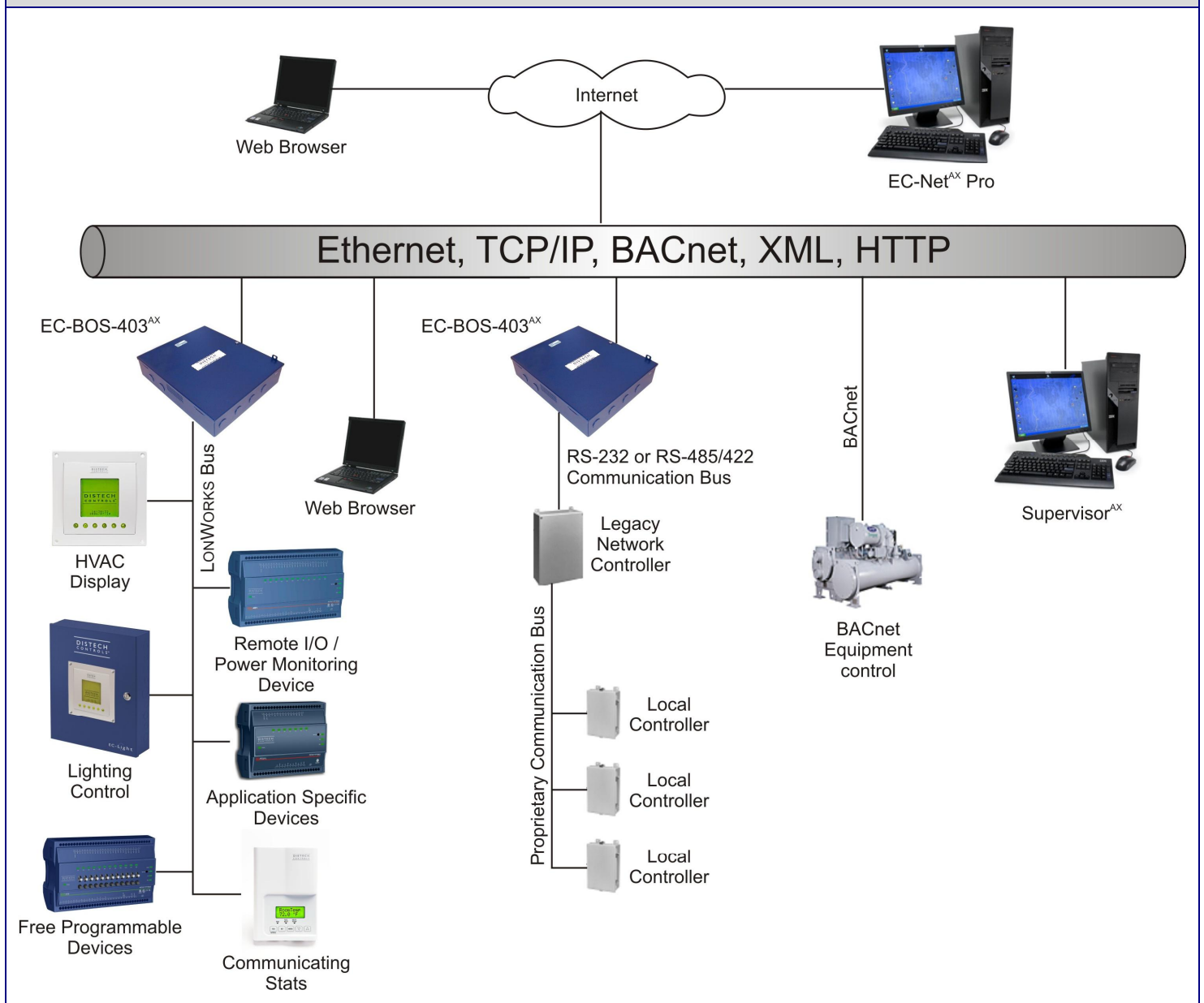
**Special Note:** The EC-BOS-403<sup>AX</sup> can integrate up to 27-networked devices with any combination of LON, Modbus, BACnet, or legacy devices. However, the number of external devices that can be supported is dependant on the memory space available on the EC-BOS-403<sup>AX</sup> and on the types of devices used. Please refer to the Tech Note on our web site at [www.distech-controls.com](http://www.distech-controls.com) for more details.

# EC-BOS-403<sup>AX</sup>

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## Typical Architecture



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# EC-BOS-403<sup>AX</sup>

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