

# JACE-545-AX

## Overview



Products developed on Tridium's Niagara<sup>AX</sup> Framework<sup>®</sup> enable end-to-end building automation and device-to-enterprise integration solutions. Users can seamlessly integrate LonWorks<sup>®</sup>, BACnet<sup>®</sup> IP (client), BACnet MSTP, Modbus<sup>®</sup>, OPC<sup>®</sup>, and other standard protocols with legacy systems to provide a unified, real-time controls network. A Niagara<sup>AX</sup> solution includes a browser-based graphical user interface allowing users to view and control underlying systems without the need for dedicated workstations or thick client software.

Niagara<sup>AX</sup> based products provide the ability to create customized user interfaces that combine 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.

JACE<sup>®</sup> (Java Application Control Engine) products bundle this software capability in a hardware platform that can be installed in most building control environments. JACEs connect to system field busses and provide real-time control functions as data from individual systems are instantaneously transformed to a common object model within the JACE. JACEs provide a fully distributed system when multiple units are networked together, providing unsurpassed scalability and reliability. In this configuration, the Niagara-based Web Supervisor<sup>®</sup> can be used to network JACE controllers and manage enterprise-level control functions. The appropriate JACE model is determined by connectivity and computing power requirements.

## Applications

Specifically designed for commercial applications, the JACE-545-AX or JACE-545-AX-EM is ideally suited for users who require a compact controller that can be wall or enclosure mounted. A single JACE-545-AX controller can be used to support a network of devices via the LonWorks port and auxiliary devices that can be accessed through the 4 RS-485 ports, or an RS-232 port (unless used by the optional internal modem).

The JACE-545-AX can integrate any combination of LON, Modbus, BACnet, oBIX or legacy devices with the appropriate optional drivers.

## Features

- Embedded RISC Microprocessor platform
- One LON FTT10A port for LON device integration
- Four RS-485 ports (electrically isolated) for connection to open and proprietary protocol devices
- Two RS-232 ports for Integration or support of an optional internal modem
- Optional User Interface (Web Server) to serve graphical information to a standard Web Browser
- Optional connectivity services to enable the JACE-545-AX to communicate with other JACEs or to the AX Supervisor, this option also enables BACnet export capability
- Optional Autodial/Auto-answer 56 Kbps internal modem for phone communications to browser or remote engineering access
- Double memory version (J-545-AX-EM) for increased capacity (256 MB Ram/128 MB Flash). R3.1 or higher

## Ordering Information

Part Number	Description
J-545-AX	Basic JACE-545 with AX software.
J-545I-AX	International version – 230 Vac 50/60 Hz input.
J-545-AX-EM	JACE-545 with expanded memory (Release 3.1 or higher ONLY)
J-545I-AX-EM	International version – 230 Vac 50/60 Hz input with expanded memory (Release 3.1 or higher ONLY)
UI-SP-5XX	Optional Web User Interface (Web Server)
EC-SP-5XX	Optional Enterprise Connectivity (enables JACE-JACE and Supervisor communications links and BACnet Export capability)
J-545-EZ	EZ order bundle including JACE-545-AX, EC-SP-5XX and UI-SP-5XX (NA with extended memory)
MDM-401	Optional dial-up modem for the JACE 545-AX (Must be factory installed)

## Specifications

### Platform – JACE-545-AX

- Motorola RISC Processor @ 250MHz.
- JACE Control Engine
- 128 MB Ram, 32 MB Flash for database backup.
- EM version: 256 MB Ram, 128 MB Flash
- One 10/100 Mb Ethernet RJ-45 connector.
- FCC Class "A" computing Device.

### Communications

- One 10/100 Mb Ethernet port – RJ-45 connection.
- Two RJ-45 connectors for RS-232 port.
- Four RS-485 ports (up to 76,800 baud) electrically isolated
- One LonWorks port – FTT-10A with Weidmuller connector.
- Optional auto-dial /auto-answer 56K modem; RJ-11 connector (uses one RS-232 port when installed).
- Lon, BACnet IP Client, oBIX Client/Server and BACnet MSTP driver included

### Operating System

- QNX® Operating System with IBM J9 Java Virtual Machine.
- JACE AX (Control Engine) Software

### Power Supply

- 120VAC, 50/60 Hz., J-545I – 230 Vac 50/60 Hz, 25 VA maximum.
- Lead wires for hot/neutral (wire nut), stud for ground connection

### Battery Backup

- Battery backup provided for all on board functions.
- Battery is monitored and trickle charged.
- Battery maintains processor operation through power failures for a pre-determined 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: 11" wide X 14" high X 2.5" deep (27.94 cm wide X 35.56 cm high X 6.35 cm deep).
- Weight: Net 4 lbs. (1.814 kg), Gross 5 lbs. (2.268 kg).

### 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 temperature range: 0°C to 50°C (32°F to 122°F).
- Storage Temperature range: 0°C to 70°C (32°F to 158°F).
- Relative humidity range: 5% to 95%, non-condensing.

**Other**

- Maximum Lon devices = up to 124
- Maximum 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

**Architecture**

