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## VYKON JACE-403-AX Family



### Overview

VYKON® is a product suite developed on the Niagara Framework® that provides an end-to-end building automation solution. Users can seamlessly integrate LonWorks®, BACnet®, Modbus®, OPC®, oBIX 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.

VYKON 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.

VYKON JACE® (Java Application Control Engine) products bundle this software capability in a hardware platform that can be installed in typical building control environments. JACEs connect to system field busses and provide real-time control functions as constant streams of 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, which provides unsurpassed scalability and reliability. In this configuration, the VYKON AX Supervisor™ 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.

The JACE-403-AX can integrate up to 27-networked devices with any combination of LON, Modbus, BACnet, or legacy devices. For installations where more than 27 devices are required, the J-403-AX-EM can be used. The J-403-EXUP-AX is an upgrade that eliminates the 27-node restriction on existing JACE-403-AX controllers.

### Applications

Specifically designed for light commercial applications, the JACE-403-AX is ideally suited for users who require a compact controller that can be wall or enclosure mounted. A single JACE-403-AX 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.

The JACE-403-AX can integrate up to 27-networked devices with any combination of LON, Modbus, BACnet, oBIX or legacy devices. For installations where more than 27 devices are required, the J-403-EXP-AX can be used. The J-403-EXUP-AX is an upgrade that eliminates the 27-node restriction on existing JACE-403-AX controllers.

## Features

- Embedded RISC Microprocessor platform
- One LON FTT10A port for LON device integration
- Direct, on-board I/O with six universal inputs, and 4 digital relay outputs
- One RS-485 port for connection to open and proprietary protocol devices
- One RS-232 port for Integration or support of and optional internal modem
- Optional web UI services to support many simultaneous users over the intranet or Internet via a standard web browser
- Double memory version (J-403-AX-EM) for increased capacity/no device restrictions (256 MB Ram/128 MB Flash) Release 3.1 or higher

## Specifications

### Platform – J-403-AX, J-403I-AX, J-403-EXP-AX (JACE-403I International)

- Motorola RISC Processor @ 250MHz.
- JACE Control Engine - with direct I/O support objects.
- 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.
- One RJ-45 connector for RS-232 port.
- One RS-485 port (up to 78,600 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™ Java Virtual Machine.
- JACE AX (Control Engine) Software with I/O control objects.

### Power Supply

- 120VAC, 50/60 Hz (J-403I-AX 240 VAC, 50/60 Hz).
- 25 VA maximum.
- Lead wires for hot/neutral (wire nut), stud for ground connection. JACE-403I has two- screw terminal strip for AC power connections, plus a stud for ground.

### 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 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).

### 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.

### Agency Listings

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



## Inputs/Outputs

- Four form C (SPDT) relay outputs rated for 24 VAC/DC @ 2 Amps resistive.
- One LED indicator for each relay.
- Six Universal Inputs for 10K ohm Type III
- (10K 4A1-International) Thermistor, 4/20 mA current loop, 0 to 10 volt, or dry contact.
- 12-bit A/D converter.
- Thermistor Sensor Range -23.3°C to 57.2°C (-10° to 135° F). Input accuracy is in the range of ±1% of span, type III thermistor curve supported.
- 0–10 volt or 4/20 mA accuracy is ±2% of span, without user calibration. Uses an external resistor for current input (four provided). Self powered or board powered sensors accepted.
- • Dry contacts (on UI) 20 Hz max. frequency (25 ms minimum pulse width). 3V open circuit, 300 mA short-circuit current.
- Board provides 20 VDC @ 80 mA to drive 4/20 mA powered sensors.
- 24 VDC 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 = 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

## Ordering Information

Part Number	Description
JACE-403-AX	Basic JACE-403 with AX software; 27 device node limit. oBIX client/server driver is included
J-403-EXPUP-AX	Upgrade of standard JACE-403-EXP to remove the 27 device limit (for existing units only)
J-403-AX-EM	Expanded memory version of JACE-403-AX-EXP – no device limit (Release 3.1 or above ONLY) oBIX client/server driver is included
J-403I-AX-EM	Expanded memory version of JACE-403-AX-EXP – no device limit; International version with 240 Vac 50/60 Hz input (Release 3.1 or above ONLY)
UI-SP-4XX	Optional Web User Interface (Web Server)
EC-SP-4XX	Optional Enterprise Connectivity (enables JACE-JACE and Supervisor communications links and BACnet Export capability)
J-403-EZ	EZ order bundle including JACE-403-AX, EC-SP-4XX and UI-SP-4XX (NA with expanded memory)
MDM-401	Optional dial-up modem for the JACE 545-AX (Must be factory installed)

# Architecture

