# VYKON JACE 202-XPR-24



## Overview

The VYKON JACE-202-XPR-24 (Java Application Control Engine) is an embedded controller/server platform designed for remote monitoring and control applications. The unit combines integrated control, supervision, data logging, alarming, scheduling and network management functions, integrated IO with Internet connectivity and web serving capabilities in a small, compact platform. The JACE-202-XPR-24 makes it possible to control and manage external devices over the Internet and present real time information to users in web-based graphical views.

The JACE-202-XPR-24 is part of the VYKON portfolio of Java-based controller/server products, software applications and tools, designed to integrate a variety of devices and protocols into unified, distributed systems. VYKON products are powered by the Niagara$^{AX}$ Framework®, the industry's leading software technology that integrates diverse systems and devices into a seamless system. Niagara$^{AX}$ supports a range of protocols including LonWorks®, BACnet®, Modbus, oBIX and many Internet standards. The Niagara$^{AX}$ Framework also includes integrated management tools to support the design, configuration and maintenance of a unified, real-time controls network.  The integral IO, enclosure and low voltage power supply make this platform ideal for fast track (XPRress) projects.

## Applications

The JACE-202-XPR-24 is ideal for smaller facilities, remote sites, and for distributing control and monitoring throughout large facilities. On-board inputs and outputs are available for applications where local control is required. The JACE-202-XPR-24 also supports a wide range of field busses for connection to remote I/O and stand-alone controllers. In small facility applications, the JACE-202-XPR-24 is all you need for a complete system.  The JACE-202-XPR-24 serves data and rich graphical displays to a standard web browser via an Ethernet LAN or remotely over the Internet. In larger facilities, multi-building applications and large-scale control system integrations, AX Supervisor™ software can be used to aggregate information (real-time data, history, alarms, etc.) from large numbers of JACEs into a single unified application. The AX Supervisor can manage global control functions, support data passing over multiple networks, connect to enterprise level software applications, and host multiple, simultaneous client workstations connected over the local network, the Internet, or dial-up modem.

## Features

- Embedded Power PC platform @ 250 MHz

- Supports open and legacy protocols

- Web User interface serves rich presentations and live data to any browser

- Supports simultaneous stand-alone control, energy management, and multi-protocol integration

- BTL® listed when BACnet driver is used – complies with B-BC (BACnet Building Controller)

- Communications board socket for optional communications card

- Compact wall-mount design for easy installation

- Built-in 24 volt AC/DC input power supply

- Onboard 16 point I/O

## Ordering Information

| Part Number | Restrictions |
|---|---|
| J-202-XPR-24 | Base Unit including two Ethernet ports, one RS-232 port, and one RS-485 port, 8 universal inputs, 4 digital outputs, 4 analog outputs, 24 volt AC/DC input power supply |

## Specifications

### Platform

- AMCC PowerPC 405EP @ 250 MHz processor

- 128 MB SDRAM & 64 MB Serial Flash

- Battery Backup

- Real-time clock

### Operating System

- QNX RTOS, IBM J9 JVM Java Virtual Machine

- Niagara$^{AX}$ Release 3.4 or later

### Onboard I/O

- 8 Universal Inputs (0-100K ohm, 0-10 volts, 0-20 MA with external resistor)

- 4 relay outputs (Form A contacts, 24 VAC @.5 amp rated)

- 4 analog outputs (0-10 volt DC)

- All IO terminated via removable screw terminal blocks for easy installation

### Communications

- 2 Ethernet Ports – 10/100 Mbps (RJ-45 Connectors)

- 1 RS 232 Port (RJ-45 connector)

- 1 RS 485 non isolated port (Screw Connector on base board)

- 1 socket for optional communication cards

### Power Input

- 24 Volt AC or DC input power supply, 40 watts max

- Termination is via screw type terminal block

### Battery Backup

- Battery Backup - 5 minutes typical - shutdown/database backup begins within 10 seconds of power failure

- Real-time clock - 3 month backup minimum via battery

### Chassis - Housed in molded plastic enclosure

- Construction:  Plastic, screw mount chassis, plastic cover

- Cooling:  Internal air convection

- Wiring access holes provided at top and bottom of case and via knockouts on base for hidden wiring

## I/O Specification

- Removable screw terminals (.2" centers) for all inputs and outputs

- Universal Input types supported:

    - Type 3 (10K) Thermistors; Thermistor Sensor Range –23.3°C to +115.5°C (–10° to +240° F).

    - Input accuracy is in the range of +/-1% of span. Others may be supported by entering custom non-linear curve interpolation points for each unique non-linear input

    - 0 to 10 volt; accuracy is +/- 2% of span, without user calibration

    - 4-20 mA current loop; accuracy is +/- 2% of span, without user calibration; Self-powered or board-powered sensors accepted; uses an external resistor for current input (four provided, mounted by installer on input terminal connections)

    - Dry contact; 3.3 volt open circuit, 300-uA short-circuit current

    - Pulsing dry contact at a rate of up to 20 Hz; 50% duty cycle

- Digital Outputs (4 ea) Pilot Duty

    - Form A relay contacts suitable for on / off control only; floating control not supported

    - Max voltage - 30 volts DC or AC

    - ½ Amp max current rating for each contact

- Analog Outputs (4 ea)

    - 0 - 10 Volt DC

## Dimensions

- 12 5/8" (320.7 mm) L x 7 1/2" (190.5mm) W x 2 1/4" (57.2mm) H

- Weight:  2.5 lbs (1.13 Kg) net; 3.5 lbs (1.59 Kg) gross

## Environment

- Operating temperature range: 0° to 50° C (32° F to +122° F)

- Storage Temperature range: 0° to 70° C (32° F to +158° F)

- Relative humidity range: 5% to 95%, non-condensing

## Optional Communications Cards

| Part Number | Description |
| --- | --- |
| NPB-LON | Optional 78 Kbps FTT10 A Lon Adapter |
| NPB-232 | Optional RS-232 port adapter with 9 pin D- shell connector |
| NPB-2X-485 | Optional dual port RS-485 adapter; electrically isolated |
| NPB-MDM | Optional 56 Kbps Auto-dial/Auto-answer Modem |

## Serial Port Connector Accessories

| Part Number | Description |
| --- | --- |
| 10148 | RJ-45 to 9 pin D-shell adapter for use with connector on the base board for RS-232 Serial connections; use of one of the following cables to extend the connection from the JACE-202-XPR-24. |
| 10180 | 4 foot (1.22 meters) RJ-45 cable for use with the 10148 adapter |
| 10181 | 10 foot (3.05 meters) RJ-45 cable for use with the 10148 adapter |
| 10182 | 25 foot (7.62 meters) RJ-45 cable for use with the 10148 adapter |

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**Agency Listings**

- UL 916, E207782 Energy Management

- C-UL listed to Canadian Standards Association (CSA) C22.2 No. 205-M1983 "Signal Equipment"

- FCC part 15 Class A

- (BTL) BTL B-BC BACnet Building controller listed when the BACnet driver is installed and configured

- C-tick (Australia)

- CE

| EMS Standards Applied | Standard Description | Criteria Met |
|---|---|---|
| CISPR 16-2-3:2006 | Radiated Emissions - Class A | Compliant |
| IEC 61000-4-2 | Electrostatic Discharge Immunity | PASS Class B |
| IEC 61000-4-3 | Radiated Electromagnetic Field Immunity | PASS Class A |
| IEC 61000-4-4 | Electrical Fast Transient/Burst Immunity | PASS Class B |
| IEC 61000-4-6 | Conducted Radio-Frequency Immunity | PASS Class A |
| IEC 61010-1 | Safety requirement for electrical equipment for measurement, control and laboratory use | PASS |

## Architecture



**Web Browser**  **VYKON AX Supervisor**  **Remote WorkPlace AX or Browser**

Internet

Niagara, HTTP, oBIX, SNMP, MODBUS, BACnet, LON

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**Field Bus Devices**  **Direct I/O Devices**