

Vykon JACE-403®

Overview

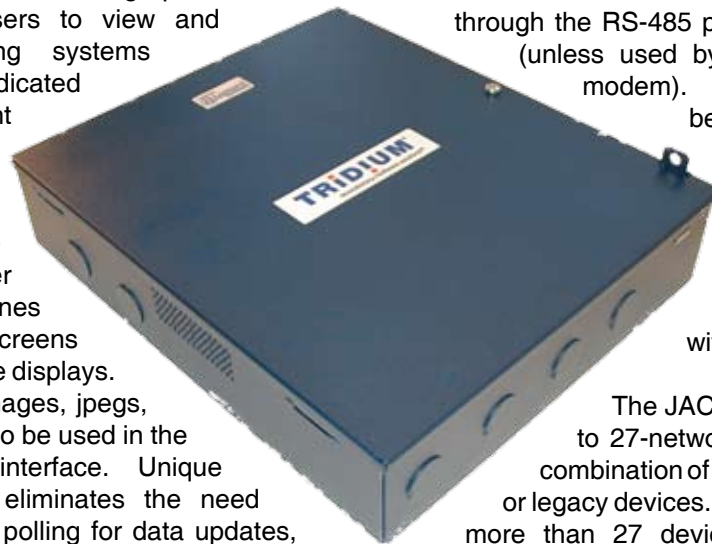
Vykon® is a product suite developed on Tridium's Niagara Framework® that provides end-to-end building automation solutions. Users can seamlessly integrate LonWorks®, BACnet®, Modbus®, OPC®, and other standard protocols with legacy systems to provide a unified real-time controls network. The suite includes 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 most any building control environment. 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 Web 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.

Applications

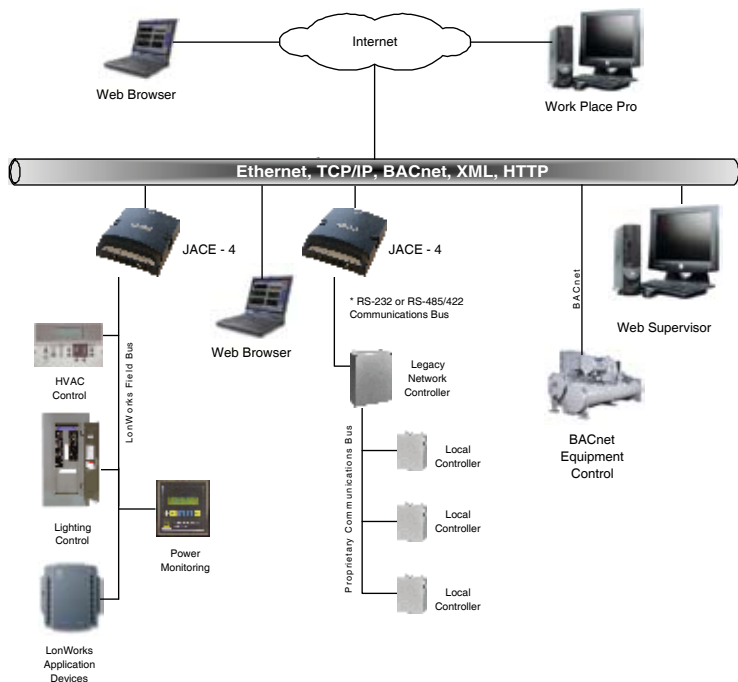
Specifically designed for light commercial applications, the JACE-403 is ideally suited for users who require a compact controller that can be wall or enclosure mounted. A single JACE-403 controller can be used to support a network of devices via the LonWorks port and auxiliary devices that can be accessed 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 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 JACE-403-EXT can be used. The JACE-403-EXUP is an upgrade that eliminates the 27-node restriction on existing JACE-403 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 an optional internal modem
- Integral web UI services to support many simultaneous users over an intranet or Internet via a standard web browser



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accuracy is in the range of $\pm 1\%$ of span, type III thermister curve supported

- 0 –10 volt or 4/20 mA accuracy is $\pm 2\%$ 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 uses screw terminals on 0.2" centers

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

Power Supply

- 120VAC, 50/60 Hz (JACE-403I 240 VAC, 50/60 Hz)
- 25 VA maximum
- Lead wires for hot/neutral (wire nut), stud for ground connection

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)

Resource Capacities

- Java Resource count maximum is 600,000
- Maximum MSTP devices per RS-485 port = 31 (depending upon device); requires one MSTP driver per port. More devices may be possible but are not guaranteed

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

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

Ordering Information

The JACE-403 has a 27-node limit for networked devices such as BACnet, LON, and OPC. The JACE-403-EXT provides similar functionality with the 27-node limit removed. The JACE-403-EXUP provides an upgrade that removes the 27-node limitation on existing JACE-403 controllers. The MDM-401 is an optional dial-up modem for the JACE 403.

Specifications

Platform – JACE-403 (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
- 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 76,800 baud) with Weidmuller connector
- One LonWorks port – FTT-10 with Weidmuller connector
- Optional auto-dial /auto-answer 56K modem; RJ-11 connector (uses the RS-232 port when installed)

Operating System

- Wind River VxWorks® Operating System with Jeode™ Java Virtual Machine
- JACE (Control Engine) Software with I/O control objects

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) Thermister, 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

www.tridium.com

North America

3951 Westerre Parkway, Suite 350
Richmond, VA 23233 USA
1.804.747.4771 Phone
1.804.747.5204 Fax

Europe, Middle East & Africa

1 The Grainstore, Brooks Green Road
Coolham, West Sussex RH13 8 GR UK
+44 (0) 1403.740290 Phone
+44 (0) 1403.741804 Fax

Asia Pacific

101 Cecil Street, #10-11
Tong Eng Building, Singapore 069533
+65.6.887.5154 Phone
+65.6.887.5342 Fax