WEBs^{AX}™ System Architecture

With EXCEL 5000® LON Controllers

Honeywell

Honeywell WEBs^{AX}™ offers an affordable integrated open communications building control system. WEBs^{AX} is a family of state-of-the-art, Web-enabled building information solutions that provide you with amazing flexibility. Powered by the revolutionary Niagara^{AX} Framework, the entire system is Internet-based, so all you need to access the system is a standard Internet browser. With the WEBs^{AX} open integrated system, you'll have the versatility to choose a collection of best-of-class products for your building needs using open communication protocols of LonWorks®, BACnet®, Modbus®, or OPC and integrate them into a single user interface.

True Integration

WEBs^{AX} integrated solutions include a range of system elements that allow you to put together exactly what you need for the ultimate in energy efficiency and cost savings. When integrated with the Excel 5000 Open System, WEBs^{AX} brings all of the power of the Niagara^{AX} Framework to existing Excel 5000 installations. The Excel CARE and WEBPro^{AX} programming software create a powerful combination to expand the existing controller infrastructure into a state-of-the-art, multi-protocol, Web-enabled system.

More Efficient

Honeywell WEBs^{AX} allows you to get the most from your people and equipment.

Save Money — There are no additional workstations to buy. With the Web-enabled user interface, you can access the system via a standard Internet browser. Whether you're in your facility, at home, or anywhere in the world you can easily view the information important to you and make changes to optimize your enterprise.

Increase Flexibility — Communicate to LonWorks, BACnet, BACnet MSTP, Modbus, and third-party protocols and integrate systems at the controller level. No hardware gateways are required.

Save Energy — Coordinate all energy-consuming loads in your building, from HVAC and lighting systems to individual copy machines, to save energy and extend the lifetime of valuable equipment. Using the multi-report functionality of the WEBs^{AX} Energy Suite, you can analyze your energy usage to identify key usage trends and create usage strategies to reduce energy costs and improve your enterprise.

Increase Productivity — Provide comfortable, efficient, productive surroundings for your most valuable assets — your employees — when you create energy-efficient working environments that utilize energy only when and where it is needed.

Eliminate Needless Work — Manage activities and information in the most efficient manner, across all subsystems, from one workstation.

More Control

Enjoy more power to control your building needs.

Security — With the WEBs^{AX} Security controller you can create specific secured areas to protect what needs to be protected and know that valuable assets and information are safe.

Access — Information access via the Web lets you easily connect to your building regardless of where you are in the world — the only software you need is your Internet browser! Alarms are prioritized and can be sent via e-mail, phone, cell phone, PDA and remote printers directly to those that can provide the fastest response.

Control Costs — With the WEBs^{AX} Energy Suite software you can analyze your energy usage and know where it's being used, so you make the most educated decisions concerning your building's operation.

Ethernet TCP/IP

WEBStation^{AX} · WEBPRO^{AX} · Web Browser

WEBStation^{AX} · WEBPro^{AX} · Web Browser

Internet/Intranet

1 RS-232 Port
1 RS-485 Port

BACnet® Modbus® OPC

W-NXS-AX
- Real time Controller with Intel Celeron® microprocessor
- Integral energy management routines
- Trending, scheduling, alarm notification via e-mail
- 512 MB RAM
- Available with 1-GB Flash drive or 40 GB hard drive
- Real-time clock with lithium battery backup

Includes
- 1 RS-232 port
- 1 RS-485 port
- 2 10/100 MB Ethernet Network Interfaces
- 1 LonWorks FTT10A port (78Kbps)
- 4 USB ports
- On-board battery backup

Software drivers available: BACnet, LonWorks, Modbus and OPC

System Options
- Enterprise Connectivity Pack provides BACnet server and Niagara Network connectivity
- Web User Interface Pack provides Web access via a standard browser

XI581 Panel Mounted Operator Interface (for Excel 500 only)
XI582 Portable Mounted Operator Interface
74-3551 Specification Data
- Reads English language point information resident in all Plant Controllers
- 8 keys, menu driven
- Access global point information
- Intuitive and easy to use

6 lines by 32 characters per line; Accesses controller status, trend information, time programs, setpoints and alarms

1 RS-232 Port
2 RS-485 Ports

WEB-545-AX
- Integral energy management routines
- Trending, scheduling, alarm notification via e-mail
- 128 MB RAM, 32 MB Flash for database backup
- Expanded memory available with 256 MB RAM, 128 MB Flash

Includes
- 1 10/100 MB Ethernet port – RJ-45 connection.
- 2 RJ-45 connectors for RS-232 port.
- 4 RS-485 ports (up to 76,800 baud) electrically isolated
- 1 LonWorks FTT-10A port
- Optional auto-dial /auto-answer 56K modem; RJ-11 connector
- LON, BACnet, IP Client, and BACnet MSTP driver included
- Additional drivers available: Modbus, and OPC
- On-board battery backup

System Options
- Enterprise Connectivity Pack provides BACnet server and Niagara Network connectivity Web User Interface Pack provides Web access via a standard browser

1 RS-232 Port
1 RS-485 Port

BACnet® Modbus® OPC

WEB 201
- Real time Controller with IBM PowerPC 405EP 250 MHz processor
- Integral energy management routines
- Trending, scheduling, alarm notification via e-mail
- 64 MB RAM & 64 MB Serial Flash expandable to 128 MB RAM
- Up to 64 on-board inputs and outputs using IO-16 and IO-34 module combinations

Includes
- 2 Ethernet Ports – 10/100 Mbps
- 1 RS-232 Port
- 1 RS 485 non isolated port
- On-board battery backup

Optional Communication Cards
- NPB-LON - Optional 78 KBps FTT10 A LON Adapter
- NPB-MDM Modem Card

Communication Options
- LonWorks, BACnet, Modbus, and OPC Power Supply Options
- NPB-PWR - Optional: 24 Volt AC/DC power supply module
- WPM-US Optional Wall Power Modules (US plug)

System Options
- Enterprise Connectivity Pack provides BACnet server and Niagara Network connectivity
- Web User Interface Pack provides Web access via a standard browser

WEB-10-16
Max of 4 IO-16 Modules per WEB-201 controller
Max of 2 IO-16 Modules per controller if combined with WEB-IO-34
8 Universal inputs
- Type 3 (10K) Thermistors standard with others supported by non-linear curve interpolation points
- 0 to 10 volt
- 4/20 mA
- Dry contact: V open circuit, 300-uA short-circuit current
- Pulsing dry contact at a rate of up to 20 Hz; 50% duty cycle
- 4 Digital Relay Outputs — Pilot Duty, Form A
- 4 0-10 VDC Analog Outputs

WEB-IO-34
Max of 1 IO-34 Module per WEB-201controller
16 Universal Inputs
- Type 3 (10K) Thermistors standard with others supported by non-linear curve interpolation points
- 0 to 10 volt
- 4/20 mA
- Dry contact; V open circuit, 300-uA short-circuit current
- Pulsing dry contact at a rate of up to 20 Hz; 50% duty cycle
- 10 Digital Relay Outputs — Pilot Duty, Form A
- 8 0-10 VDC Analog Outputs
- Contains integral 24 VAC power Supply for WEB 201 controller

Other Open Systems BACnet/Modbus

1 RS-232 Port
1 RS-485 Port

BACnet® Modbus® OPC

WEB-403-AX
- Integral energy management routines
- Trending, scheduling, alarm notification via e-mail
- 128 MB RAM, 32 MB Flash for database backup
- Expanded memory available with: 256 MB Ram, 128 MB Flash
- Six Universal Inputs
  - Type 3 (10K) Thermistors standard with others supported by non-linear curve interpolation points
  - 0 to 10 volt
  - 4/20 mA
  - Dry contact; V open circuit, 300-uA short-circuit current
- Four digital relay outputs — Pilot Duty, Form C

Includes
- 1 10/100 MB Ethernet port – RJ-45 connection
- 1 RJ-45 connectors for RS-232 port
- 1 RS-485 ports (up to 76,800 baud) electrically isolated
- 1 LonWorks FTT-10A port
- Optional auto-dial /auto-answer 56K modem; RJ-11 connector
- LON, BACnet, IP Client, and BACnet MSTP driver included
- Additional drivers available: Modbus, and OPC
- On-board battery backup

System Options
- Enterprise Connectivity Pack provides BACnet server and Niagara Network connectivity
- Web User Interface Pack provides Web access via a standard browser

WEB-AX Security Controller
Includes
- 128 MB RAM/128 MB Flash
- 2 10/100 MB Ethernet ports
- 1 RS-485 serial port
- 2 RS-232 serial port
- 2 communication card option slots
- Integrated Web server
- BACnet IP Server Connectivity
- Embedded database and security application software
- 6 supervised inputs
- 4 Form C relay outputs
- 3 digital inputs
- Security network communications capacity for 2 remote card readers and 1 remote Security I/O Module

Remote Reader Module
Consists of an additional 2 Wiegand style card readers and required I/O to support 2 doors
Includes
- 4 supervised inputs
- 2 digital inputs
- 2 Form C relay outputs
- Up to 7 reader modules to increase capacity to 16 card readers

Access Control System

Security I/O Module
Includes
- 8 Supervised inputs
- 2 digital inputs
- 8 Form C relay outputs

A total of 8 Security I/O modules can be added to the WEBs^{AX} Security Controller for system expansion to 64 inputs and 64 outputs.

Intrusion Detection System

Security System

Modem · Modem · Modem

Excel 50 Controller
74-3029 Specification Data

I/O Point Capacity

Analog Inputs:	8	0 to 10 Vdc 0 to 20 mA (w/ 499 Ω resistor) NTC 20k ohm
Analog Outputs:	4	0 to 10 Vdc
Digital Inputs:	4	3 of 4 fast totalizer
Digital Outputs:	6	Triac 800 mA (all 6 Triacs max 2.4A)

Same Power of the Excel 500
- Similar operator interface
- Same software
- Same BUS communication
- Fully programmable using Excel CARE

Model Type:	XL50 UPC–without operator interface
	XL50 UMMIPC–with operator interface

I/O Point Capacity
- 22 physical points
- Up to 256 pseudo points
- 46 network variables supported on the LonWorks network

Application Module: Flash-EPROM
Engineering Tool: Excel CARE

Excel 500 Controller
74-2036 Specification Data

Input/Output Modules

Analog Input
XF521 Insert Card

Module Type:	Analog input
No. of Inputs:	8
Type of Inputs:	0 to 10 volts 0 to 20 mA or 4 to 20 mA NTC, -58° to 302° F, -50° to 150° C PT1000_1, -58° to 302° F, -50° to 150° C

XF526 Insert Card

Type of Module:	Analog input
Number of Inputs:	8
Type of Inputs:	0 to 10 volts 0 to 20 mA or 4 to 20 mA NTC, -58° to 302° F, -50° to 150° C PT1000_1, -58° to 302° F, -50° to 150° C PT1000_2, -30° to 752° F, 0° to 400° C PT3000, -58° to 302° F, -50° to 150° C Balco, -58° to 302° F, -50° to 150° C

Analog Output
XF522 Insert Card

Module Type:	Analog output
No. of Outputs:	8
Type of Outputs:	0 to 10 volts +/- 1 mA each
Manual Override Switches:	5
No. of LEDs:	8

XF527 Insert Card

Module Type:	Analog output
No. of Outputs:	8
Type of Inputs:	0 to 10 volts +/- 1 mA each
Manual Override Switches:	0
No. of LED's:	5

Digital Input
XF523 Insert Card

Module Type:	Digital input
No. of Inputs:	12
No. of LEDs:	12
Inputs 1 and 2:	Digital input or fast totalizer
Inputs 3–12:	Digital input or slow totalizer

Digital Output
XF524 Insert Card

Module Type:	Digital output
No. of Outputs:	6
Type of Outputs:	5 changeover contacts 1 normally open contact
Manual Override Switches:	5
No. of LEDs:	6

XF529 Insert Card

Module Type:	Digital output
No. of Outputs:	6
Type of Outputs:	5 changeover contacts 1 normally open contact
Manual Override Switches:	0
No. of LEDs:	6

Three Position Output
XF525 Insert Card

Module Type:	Three position output
No. of Outputs:	3
Type of Outputs:	Floating control
Manual Override Switches:	3
No. of LEDs:	3 pairs of 2

Power Module
XF502 Power Module

Module type:	Power supply
Input:	24V ac + 10% / -15%
Output:	Class 2, 24V ac
No. of Switches:	1
No. of LEDs:	3

Modular design to help with installation (for both Excel 500 Controller and Smart Excel 500):
- Add modules as needed for future expansion
- Input/output modules (16)
- Up to 128 physical points
- Up to 256 pseudo points
- Fully programmable using Excel CARE
- 512 network variables supported on the LonWorks network

LonWorks BUS

Modem

Smart Excel 500
74-3666
Specification Data

Smart I/O Modules
74-3671 Specification data

XFC3A06001
XFC1A06001
Terminals: Fixed permanent
Digital Inputs: 4
Digital Outputs: 4
Analog Inputs: 4 (20k NTC)
Analog Outputs: 2 (VDC)

XFC3B06001
XFC1B06001
Terminals: Removable
Manual Override: 6
Number of LEDs: 10
Digital Inputs: 4
Digital Outputs: 4
Analog Inputs: 4 (20k NTC)
Analog Outputs: 2 (VDC)

Compact I/O Modules

Digital Input
XIO-10DI
Number of Inputs: 10
XIO-4DI
Number of Inputs: 4

Digital Output
XIO-4DO
Number of Outputs: 4
Type of Outputs: 4 isolated changeover contacts

Analog Input
XIO-8AI
Number of Inputs: 8
Type of Inputs: 40kΩ to 4MΩ selectable via LNS plug-in

XIO-4NTC
Number of Inputs: 4
Type of Inputs: 20k NTC
XIO-4PT1000
Number of Inputs: 4
Type of Inputs: Platinum 1000

Analog Output
XIO-4AO
Number of Outputs: 4
Type of Outputs: 0-10Vdc @ 5mA

Accessories
XIO-10MSB
Type of Accessory: Hub expander

Distributed I/O Modules
74-2145 Specification data

Analog Input
XFL521B Module
Number of Inputs: 8
Type of Inputs: 0 to 10 Volts 0 to 20mA or 4 to 20mA 20k NTC PT1000

Accessories: 3 4 5

Analog Output
XFL525B Module
Number of Outputs: 8
Type of Outputs: 0 to 10 Volts
Number of LEDs: 8

Accessories: 1 3 4 5

Digital Input
XFL523B Module
Number of Inputs: 12
Number of LEDs: 12
Accessories: 3 4 5

Digital Output
XFL524B Module
Number of Outputs: 6
Type of Outputs: 6 isolated changeover contacts
Number of LEDs: 6

Accessories: 2 3 4 6

Distributed Input/Output Accessories

1 **XFR522**
Module Type: Manual override for XFL522
Manual Override Switches: 8

2 **XFR524**
Module Type: Manual override for XFL524
Manual Override Switches: 6

3 **XSL511**
Module Type: Connector module for XFL521, XFL522, XFL523, XFL524

4 **XSL512**
Module Type: Manual disconnect module between terminal and I/O modules

5 **XSL513**
Module Type: Terminal block for XFL521/ 522/523

6 **XSL514**
Module Type: Terminal block for XFL524

Unitary Controller
PUL6438

Programmable Unitary Controller
- Extended Temperature Rated -40° F (-40° C) to 150° F (65.5° C)
- Adaptive Integral Algorithm Control — accurate control for space control applications; AIA Control reduces overshoot and ensures customer comfort is achieved
- Removable terminal strips, color-coded input/output labels, internal real-time clock, internal DC power supply

Inputs
- 6 universal inputs
- 4 digital inputs

Outputs
- 3 analog outputs
- 8 digital outputs

VAV Controller
PVL6436A

Programmable Variable Air Volume Controller
- Integrated actuator
- Integrated on-board pressure sensor
- Adaptive Integral Algorithm Control — accurate control for space control applications; AIA Control reduces overshoot and ensures customer comfort is achieved
- Removable terminal strips, color-coded input/output labels, internal real-time clock, internal DC power supply

Inputs
- 6 universal inputs
- 4 digital inputs
- Integrated on board pressure sensor

Outputs
- 3 analog outputs
- 6 digital outputs
- Integrated actuator

VAV
PVL6438M

Programmable Variable Air Volume Controller
- Integrated on-board pressure sensor
- Adaptive Integral Algorithm Control — accurate control for space control applications; AIA Control reduces overshoot and ensures customer comfort is achieved
- Removable terminal strips, color-coded input/output labels, internal real-time clock, internal DC power supply

Inputs
- 6 universal inputs
- 4 digital inputs
- Integrated on board pressure sensor

Outputs
- 3 analog outputs
- 8 digital outputs

Programmable Unitary Control

Zone Control

Constant Volume AHU Controller W7750
74-2956 Specification Data

- Proven PID space temperature control algorithm
- Integral or packaged economizer control
- Separate intelligent recovery rates for heating and cooling
- Demand limit control temperature setpoint in energy saving direction

W7750A Constant Volume AHU Controller

Inputs
- 1 T7770 wall module
- 1 resistive input
- 2 dry contact digital inputs
- 1 bypass button input

Outputs
- 6 relay outputs
- 1 LED output

W7750B/C Constant Volume AHU Controller

Inputs
- 1 T7770 wall module
- 4 resistive inputs
- 2 voltage inputs
- 4 dry contact digital inputs
- 1 bypass button input

Outputs
- 8 triac outputs (W7750B)
- 1 LED output
- 5 triac and 3 analog outputs (W7750C)

VAV Box Controller W7751
74-2942 Specification Data
74-2953 Specification Data

- Pressure-independent or pressure-dependent VAV box control
- Single-duct/dual-duct VAV box control solutions
- Reheat and peripheral radiation control (selectable "first on" sequencing)
- Series/parallel fan
- Supply/return air tracking

W7751H

Inputs
- 1 T7770 wall module
- 1 resistive input
- 1 voltage input
- 1 bypass button input
- Integrated actuator

Outputs
- 4 triac outputs
- 1 LED output

W7751B, D, F
- Expanded input/output capacity, actuator not included

Inputs
- 1 T7770 wall module input
- 2 resistive inputs
- 1 voltage input
- 3 dry contact inputs
- 1 bypass button input

Outputs
- 8 triac outputs
- 1 LED output

Unit Ventilator Controller W7753
74-2962 Specification Data

- Space or return air temperature control
- ASHRAE cycles 1, 2, 3
- Up to 4 stages of heating
- Up to 4 stages of cooling
- Packaged or floating damper control

Inputs
- 1 T7770 wall module
- 2 resistive inputs
- 2 voltage/current inputs
- 4 dry contact digital inputs
- 1 bypass button input

Outputs
- 8 triac outputs
- 1 LED output

Fan Coil Unit Controller W7752
74-2959 Specification Data

- 2 pipe, 4 pipe fan coil unit control
- Up to 3 speed fan control
- With or without electrical reheat
- Space freeze protection

Inputs
- 1 T7770 wall module
- 1 dry contact digital input
- 1 bypass button input

Outputs
- 3 relay outputs
- 1 LED output
- 1 electric heat relay (F type only)

Remote Input/Output Device W7761
74-2698 Specification Data

- Generic I/O for lighting, exhaust fans, pumps and more
- LonMark® standard objects for sensors and actuators

Inputs
- 4 resistive inputs
- 2 voltage inputs
- 4 dry contact digital inputs

Outputs
- 8 triac outputs

Communicating Thermostat T7350H
63-1299 Specification Data

- One thermostat model for either heat pump or conventional RTU
- Up to three stages of heat and cool
- Works with T7740 remote temperature sensor
- Proportional plus integral control eliminates temperature fluctuations
- 7-day programming – 2 occupied / 2 not occupied periods per day
- Discharge air sensing capability with C7046C sensor

Hydronic Controller W7762/3
74-2934 Specification Data

- Radiators, induction units and fan coil units with manual fan switching
- High efficiency, low cost heating valve application solution
- Model with integrated or remote module for wall or unit mounted

Inputs
- 1 space temperature sensor (either built in or via T7770 wall module)
- 1 dry contact digital input

Outputs
- 1 relay output
- 4 triac outputs

3rd Party LON Devices

All devices programmed in CARE.

*LonMark is a trademark of Echelon Corporation

Powered by Niagara^{AX} Framework™

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63-9656
February 2007
Printed in the USA on recycled paper

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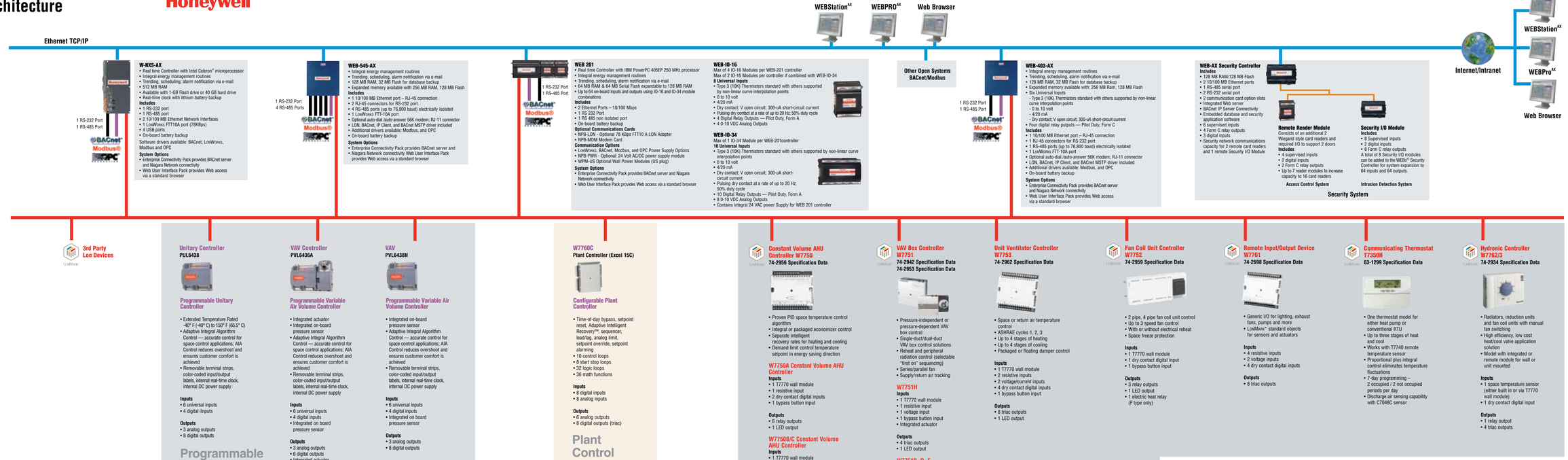
Control Costs — With the WEBs^{AX} Energy Suite software you can analyze your energy usage and know where it's being used, so you make the most educated decisions concerning your building's operation.

Designed For Change — As your business changes, you can easily reconfigure a workspace, move a department, or make other changes and know that your facility can change as quickly as your business does. Because WEBs^{AX} utilizes standard Ethernet communication technology, you can leverage the Ethernet backbone of your building, reducing costs as your business grows.

Proven — Backed by the Honeywell name. Our leadership in control technology spans more than 110 years. You can count on Honeywell to deliver value, quality and reliability.



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63-9656
February 2007
Printed in the USA on recycled paper

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