# System Description

Since its beginning, Automated Logic has focused on one objective: to develop innovative building automation systems with the latest technologies, which advance operational freedom, flexibility and ease of use. With the introduction of the Internet, the capabilities for building control combining our technologies with a global communications platform reached new levels:

• Ability to access information and control buildings from anywhere
• Ability to access information with a variety of devices, from desktop PCs to web-enabled cell phones
• Elimination of multiple databases, minimizing management needs

These capabilities are yours with WebCTRL®, Automated Logic's webbased building automation system. Unlike other systems merely *adapted* to the web, WebCTRL *adopted* emerging web technologies, creating the industry's most open, integrated and full-featured system. Yet building automation is just part of the story. Combined with its reporting, trending and scheduling capabilities, WebCTRL can help you better analyze your energy consumption, develop more effective conservation strategies and ultimately save on your operating costs.
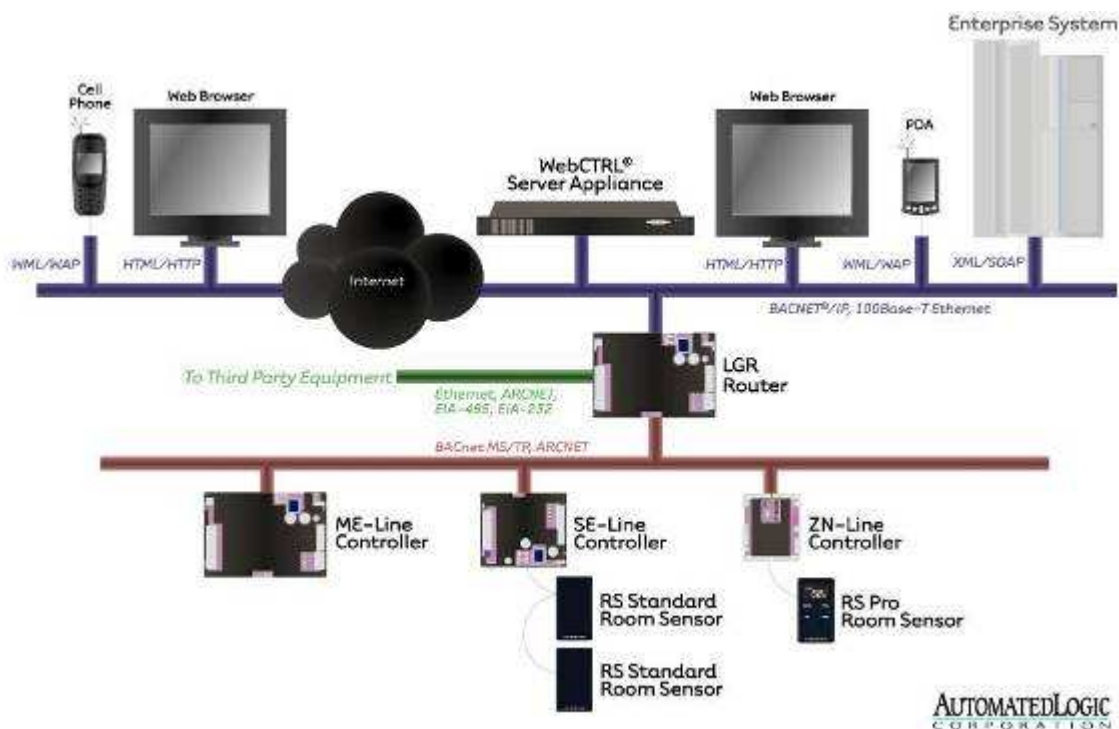
WebCTRL supports major communications protocols including BACnet®, LonWorks®, MODBUS and SNMP. With its ability to run on Java2-compliant server platforms such as Windows®, Linux and Sun™ Solaris™, WebCTRL can operate with many JDBC-compliant databases including Access, SQL and Oracle®. And since it supports XML/SOAP, WebCTRL can easily share data with enterprise or third-party software to accomplish a range of tasks including:

• Generation of bills for tenants' off-hours usage
• Automatic generation of building systems' maintenance work orders
• Real-time usage pricing and/or system operating responses

With these capabilities and more, you've never had such potential to configure, network and manage building control systems in ways that best serve your operating needs and budget.

WebCTRL not only saves energy -it saves on expenses. Unlike other systems that require costly custom programming and are more difficult to use, our energy-saving features are fully integrated at installation. Features like:

• *Setpoint Optimization* - calculates optimum setpoint values based on actual operating requirements
• *Optimum Start* - assures comfortable settings at time of occupancy based on building conditions and system capacity
• *Demand Reduction* - reduces energy use on a short-term basis in response to utility pricing, billing criteria, regional consumption, etc.

These energy-saving functions are combined with a wealth of other standard operating features, some of which include:
• *Thermographic Color Floor Plans* - convey a quick understanding of facility-wide comfort and operating conditions
• *Hierarchical and Group Scheduling* - supports customized, graphically displayed schedules for building, floors, zones or equipment groups to flexibly manage energy use
• *Trending* - enables operators to track and troubleshoot building conditions
• *Logging/Reporting* – extracts and formats operating data from a browser to Acrobat®, Excel® and other applications with a single click
• *Logical Alarming* – generates alarms and notifies users following a specified sequence of events
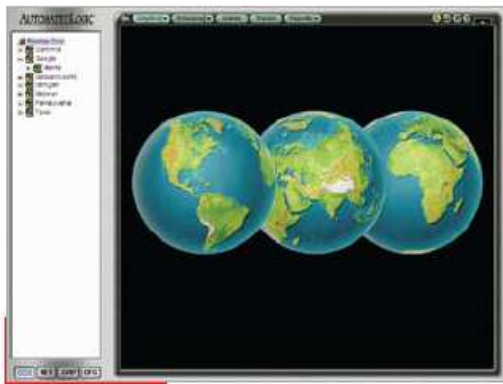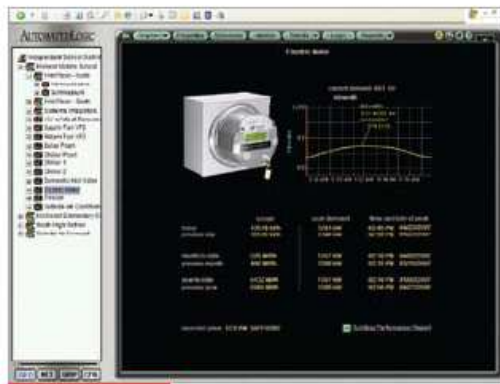

Control multiple buildings with secure browser access from anywhere in the world.

Dynamic color floor plans provide an immediate understanding of conditions in your building. Graphics can be customized for your specific information needs.
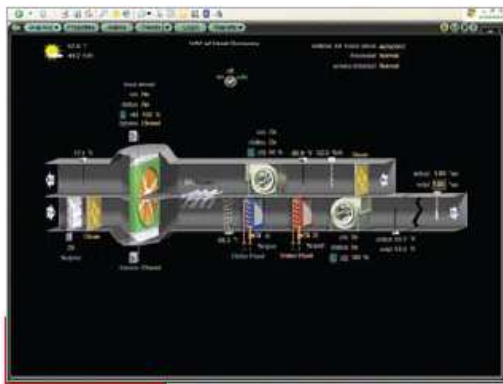
Define appropriate zone control setpoints with a simple graphical adjustment.

Monitoring and storing your energy usage data helps you manage your utility consumption.

System Components:

WebCTRL Software and User interface

Automated Logic's WebCTRL® is a building automation system that offers an intuitive user interface and powerful control features. Your building can be accessed from anywhere in the world using a standard web browser, eliminating the need for special software on the workstation. Through a browser you can access all building management functions including:
• Setting and changing schedules,
• Adjusting setpoints and other control properties,
• Graphically trending important building conditions,
• Viewing and acknowledging alarms, and
• Running preconfigured and custom reports on energy usage, occupant overrides, tenant billing, and much more.

Developed entirely around proven open standards and web technologies, WebCTRL's server software runs on a variety of major platforms, including Windows®, Sun Solaris and Linux. Major databases are supported by the server, such as MS SQL Express, MS SQL Server, PostgreSQL and Oracle.

Key Features and Benefits
• Intuitive, comprehensive building operation with dynamic, interactive graphical access
• Completely designed around open standards
• Uses the language of the web (HTTP) to communicate over the Internet or intranet without special software or plug-ins
• Runs on multiple platforms including Windows, Linux, and Sun Solaris
• Advanced alarm management capabilities including email, pagers, network printers, etc.
• Uses sophisticated alarm escalation system protection with multi-level passwords and Secure Sockets Layer with 128-bit encryption for security
• Monitors and controls a wide variety of third party HV-ac and electrical equipment through a browser
• Fully compatible with legacy ALC Systems

LGR line High Speed Ethernet Router

The LGR is an extremely powerful, high-speed router/gateway that can connect hundreds of control modules to a BACnet®/IP backbone. Support for BACnet/IP, BACnet-over-Ethernet, ARCNET 156 Kbps, MS/TP, and BACnet PTP communications are standard. A wide range of open and proprietary protocol translator drivers allow the LGR to also serve as a gateway to other manufacturers' equipment. Fully programmable, the LGR can also execute complex control strategies for high-level system integration.

Key Features and Benefits

• 10/100Base-T Fast Ethernet allows modules to serve as a BACnet router between BACnet/IP system backbone and field devices subnetwork.
• Native BACnet communications to field devices over a high-speed ARCNET 156 Kbps or BACnet MS/TP network.
• Can route messages from BACnet/IP to BACnet-over-Ethernet, providing compatibility with older BACnet systems.
• A wide range of open and proprietary protocol translator drivers allow the LGR to also serve as a gateway to other manufacturers' equipment.
• Designed with a high-speed true 32-bit microprocessor with cache memory, Fast Ethernet controller, high performance 32-bit serial communications co-processor, and ARCNET communications co-processor, LGR routers have the horsepower to serve the most demanding translation and communications functions.
• 16 MByte battery-backed SDRAM (32 bit wide), with 12 MBytes available for use, stores application programs, trends and other data when power is lost.
• 8 MByte Flash memory (32 bit wide) for easy field upgrades over the network.
• Battery backed real-time clock provides true standalone capabilities. LGRs recover from power failures providing full continuity of operations, even when communications are disrupted.

ME line Powerful Multi-Equipment Controller
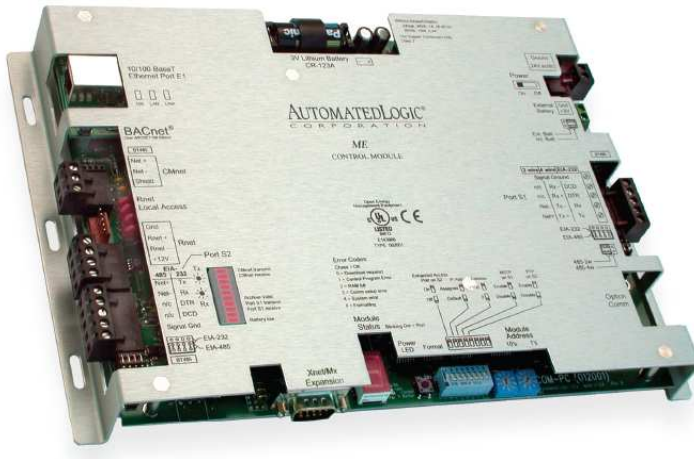
ME controllers have the speed, power, memory, and I/O flexibility to handle the most demanding control applications in the industry. Capable of controlling multiple pieces of equipment simultaneously, these robust BACnet controllers can support complex control strategies with plenty of memory for trends and schedules. Battery backed RAM and a real-time clock make these controllers ideal for critical applications, where the ability to recover from power outages and network interruptions is crucial.

Key Features and Benefits

• Multi-equipment capabilities support general HV-ac applications including complex central plants.
• Native BACnet communications to field devices over a high-speed ARCNET 156 Kbps or BACnet MS/TP network.
• Controller units include an expansion port for MEx I/O expanders or previous generation MX expanders. Up to six MEx expanders can be mounted in a stack or remotely mounted for scalable control solutions.
• Designed with a high-speed true 32-bit micro-processor with cache memory, high performance 32-bit serial communications co-processor, ARCNET communications co-processor and CAN (Control Area Network) co-processor, ME controllers have the horsepower to serve the most demanding control applications.
• 16 MByte battery-backed SDRAM (32 bit wide), with 12 MBytes available for use, stores application programs, trends and other data when power is lost.
• 8 MByte Flash memory (32 bit wide) for easy field upgrades over the network.
• Battery backed real-time clock provides true standalone capabilities. Control modules recover from power failures providing full continuity of operations, even when communications are disrupted.

SE6166 /SE6104 Rugged Flexibility for Single Equipment Applications

Automated Logic's powerful SE line provides a rugged solution for single equipment applications. Designed to operate in a wide range of environmental conditions, SE controllers can be used in rooftop units, mechanical rooms, equipment closets, or almost any other weather tight location. Fully programmable using the EIKON®-LogicBuilder graphic programming language, SE controllers use native BACnet communications over either a high-speed ARCNET 156 Kbps network or a medium speed MS/TP network to provide maximum flexibility and interoperability.

Key Features and Benefits

• Native BACnet communications to field devices over a high-speed ARCNET 156 Kbps or BACnet MS/TP network.
• 12-bit Analog to Digital converter provides extreme precision on all inputs. Pulse counting capability up to 40 Hz is available on selected inputs.
• Uses a high-speed microprocessor with 1 MByte Flash memory and 1 MByte of RAM for unparalleled programmability. Firmware upgrades can be downloaded remotely – no chip replacement necessary.
• Battery backed real-time clock provides true stand-alone capabilities. Control modules recover from power failures providing full continuity of scheduled operations, even when communications are disrupted.

ZN341v+/ZN141v+ VAV Controller

Automated Logic's ZN341v+/ZN141v+ are designed for a variety of pressure-independent VAV applications. These advanced controllers feature an integral actuator, advanced precision air-flow sensor, flexible connectivity to the full line of RS sensors, and easy-to-use air balance routines. Sophisticated pre-engineered control algorithms reduce energy consumption, maximize actuator life, and ensure occupant comfort. The ZN series controllers are fully programmable and provide networked peer-to-peer communications using native BACnet-over-ARCNET 156 Kbps or MS/TP.

Key Features and Benefits

• Optimized design for all types of pressure independent VAV applications including cooling only, cooling with modulated hot water re-heat, cooling with electric re-heat, constant volume boxes and dual duct boxes.
• Uses a high speed 16-bit microprocessor with 1 MByte Flash memory and 512 KByte of RAM for graphical programming, diagnostic trends, and easy firmware upgrades using remote downloading - no chip replacement necessary.
• Built-in 0-10 V-dc AO for baseboard or re-heat valve actuator.
• Compact and rugged design for easy mounting and an integral brushless actuator for reliability and longevity.
• The combination of the precision air flow sensor and advanced VAV algorithm assures occupant comfort both at minimum and maximum design air flows, while maximizing actuator life.
• Compatible with the ZASF integral air flow sensor/actuator assembly for dual duct applications.
• Rnet port supports Automated Logic's line of RS room sensors and provides local access to the system.

ZN551 Zone Controller

Automated Logic's ZN551 provides unprecedented power and flexibility through fully programmable networked controllers. The ZN551 controllers connect to the Building Automation System (BAS) network using BACnet over ARCNET 156 Kbps or MS/TP. The ZN551 supports a line of RS room sensors using Rnet port.

Key Features and Benefits

• Powerful zone controller for VAV, heat pump, unit ventilator and other packaged HV-ac applications.
• Native BACnet communications to field devices over a high speed ARCNET 156 Kbps or BACnet MS/TP network.
• Uses a high speed 16-bit microprocessor with 1 MByte Flash memory and 512 KByte of RAM for unparalleled programmability. Firmware upgrades can be downloaded remotely – no chip replacement necessary.
• The ZN551 is part of a full line of ZN controllers which include a variety of Universal Inputs, Binary Outputs and 0-10V-dc Analog Outputs. Other ZN models with built-in flow sensors and/or integral damper actuators are available as well as optional single/dual air flow sensors for pressure independent VAV applications.
• An extensive library of pre-engineered control routines provides proven solutions for most zone control applications. Custom programs can be easily written in EIKON®-LogicBuilder, ALC's legendary graphic programming language.

Third Party Integration

This list of manufacturers shows just some of the equipment to which we're connected. WebCTRL®'s open architecture and support for industry standards makes integration with third party mechanical and electrical building sub-systems easy. The WebCTRL system is capable of supporting multiple protocols over a TCP/IP network allowing many equipment items to be connected directly to the main WebCTRL backbone. Equipment using BACnet® can be connected to an IP, ARCNET, MS/TP, or Point to Point (PTP) network segment. Automated Logic's Open Systems Integration allows for seamless interconnection to equipment using BACnet, Modbus, N2, JBUS, or LonWorks, as well as an extensive list of proprietary protocols.

Automated Logic continually develops innovative third party integration solutions to add to our Integration resume. Contact your local Automated Logic dealer for a current listing of integration applications or to discuss your custom integration requirements

Variable Speed Drives:
ABB, Allen-Bradley, Cutler-Hammer,
Danfoss Graham, Square D, Toshiba

Fire:
Siemens Fire Safety,
Edwards, Simplex, Kidde

Lighting:
GE, Microlite, Square D, Triatek,
PCI, Watt Stopper

Chillers:
Carrier, Dunham-Bush, Mammoth,
McQuay, Trane, York, Multistack

Boilers:
Cleaver Brooks, Fireye

Power Monitoring:
Cutler-Hammer, Electro Industries, GE, Power
Measurement, United Power, Veris Industries,
APC, MGE, Siemens, Square D

Fume Hood Control:
Tek-Air, TSI, Phoenix, Triatek

Tank Monitoring:
Veeder Root, Earthsafe

Generators:
Caterpillar, Cummins/Onan, Mammoth,
Detroit Deisel, Kohler

UPS Monitoring:
MGE, Powerware, APC, Liebert, Piller

Static Transfer Switches and Switchgear:
ASCO, Cyberex, GE Fanuc, Power Paragon,
Russelectric, Zenith, Cummins, LayerZero, MGE,
United Power

**Computer Room Air Conditioning
Units:**
Air Technology Systems, Inc. (ATS), APC
Network Air (formerly Airflow Company),
Liebert, Stulz, Data Aire