WebCTRL® Optimization Solutions

Chilled water system optimizer

The Automated Logic® chilled water system optimizer is a sophisticated, scalable, native BACnet optimization solution for chilled water plants. The chilled water system optimizer minimizes the energy use of the entire chilled water system, up to and including air handling units and other water side chilled water consumers. By providing optimized control of the chilled water and condenser water setpoints, the chilled water system optimizer can lower energy costs while also maintaining occupant comfort levels in the building. The chilled water system optimizer solution consists of a self-adapting control algorithm packaged in an application specific Automated Logic controller.
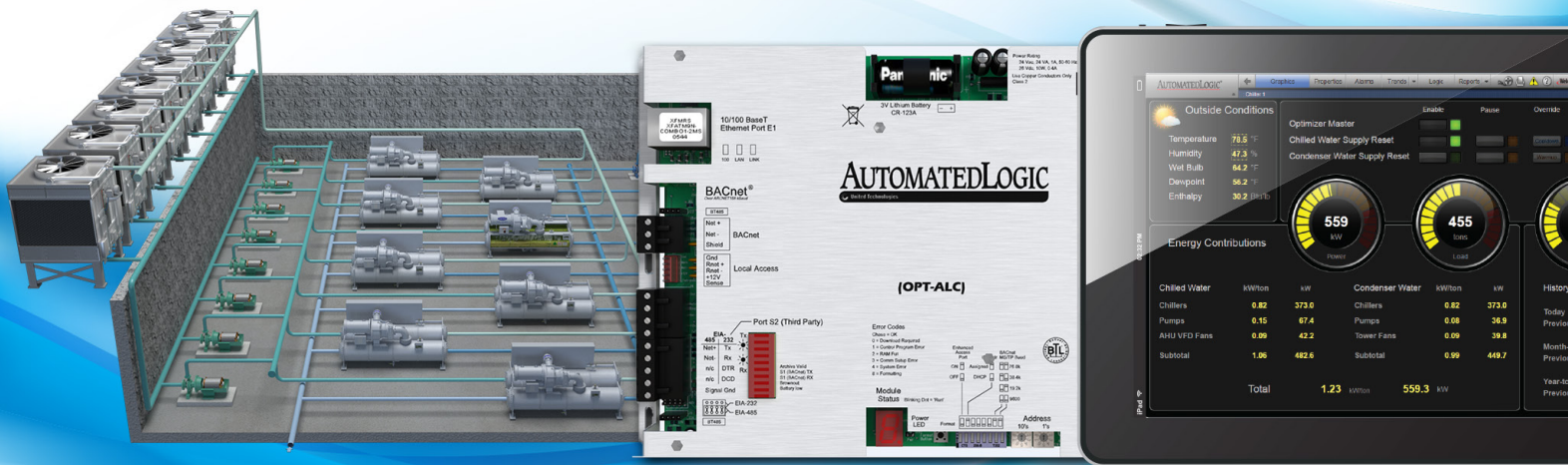
Patent pending: US20150052919 A1

Key Features and Benefits

- **Intuitive** – Monitors and displays optimization metrics via integrated dashboard.
- **Scalable** – Designed to be used on plants of varying size, up to a maximum of eight chillers.
- **Flexible** – Works with the chilled water side alone, condenser water side alone, or both.
- **Comprehensive** – Can work with virtually any existing plant control system.
- **Dynamic** – Adapts automatically to changing environmental conditions and system changes over time. Senses total system energy usage including all plant room equipment and airside energy consumption.
- **Open** – Integrates easily via network communications with all mechanical and electrical equipment, regardless of brand.
- **Seamless** - Interfaces easily with the Automated Logic® PlantCTRL™ chiller plant solution enabling additional plant efficiency improvements.
- **Intelligent** – Adjusts chilled water and condenser water setpoints to achieve overall combined chiller plant and air-side energy savings.
- **Efficient** – Minimizes energy use over the entire chilled water system, including chilled water plant equipment and air-side chilled water consumers. Based on field tests[1], potential energy savings from 3 - 15% are possible.
- **Non-disruptive** – Integrates to the existing plant control system, intelligently computing optimum chilled water and condenser water setpoints while continuously monitoring plant room and load-side energy consumption. Fail-safe logic is designed into the system so that the plant will revert to default setpoints in the event that optimized setpoints cannot be determined.
- **Affordable** – Lower first cost versus competitor offerings that require extensive plant analysis, system modeling, control system and mechanical system upgrades.

1- Optimizer algorithm was evaluated using modeling and computer driven simulations and tested in several field trial sites. Actual savings may vary depending on duration of use, plant size, equipment used, and the existing plant control strategy.
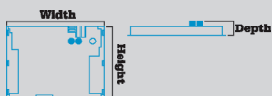
We make data **big.**™
Next level building automation engineered to help you make smart decisions.

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Specifications

Part#: OPT-ALC

BACnet Support:	Conforms to the BACnet Building Controller (B-BC) Standard Device Profile as defined in ANSI/ASHRAE Standard 135-2012 (BACnet) Annex L, Protocol Revision 9
Communication Ports:	The following ports are available on the chilled water system optimizer: **10/100 BaseT Ethernet**: 10/100 Mbps port for BACnet/Ethernet, BACnet/IP, or Modbus® TCP/IP **BACnet Port**: EIA-485 port for ARCNET 156 kbps communications **Port S1:** EIA-232 or EIA-485 configurable port for BACnet MS/TP (9600 bps–76.8 kbps) **Port S2:** EIA-232 or EIA-485 configurable port for Modbus RTU and ASCII modes (9600 bps–76.8 kbps) **Local Access:** for system start-up and troubleshooting
Microprocessor:	32-bit Motorola Power PC microprocessor with cache memory, Fast Ethernet controller, high-performance 32-bit communication co-processor, ARCNET communication co-processor, and I/O expansion CAN co-processor
Memory:	16 MB non-volatile battery-backed RAM (12 MB available for use), 8 MB Flash memory, 32-bit memory bus
Real-time clock:	Battery-backed real-time clock keeps track of time in event of power failure
Battery	10-year Lithium CR123A battery retains the following data for a maximum of 720 hours during power outages: time, control programs, editable properties, schedules, and trends
Status indicators:	LED status indicators for communications and low battery status. Seven-segment status display for running, error, and power status
Router addressing:	Rotary dip switches for intuitive network addressing of module
Protection:	Incoming power is protected by a replaceable 3 Amp Pico® fuse. Network connections are protected by non- replaceable internal solid-state polyswitches that reset themselves when the condition that causes a fault Incoming power is protected by a replaceable 3 Amp Pico® fuse. Network connections are protected by non- replaceable internal solid-state polyswitches that reset themselves when the condition that causes a fault returns to normal. The power, network, input, and output connections are also protected against transient excess voltage/surge events lasting no more than 10 msec.
Listed by:	UL-916 (PAZX), cUL-916 (PAZX7), FCC Part 15-Subpart B-Class A, CE
Environmental operating range:	-20°F to 140°F (-29°C to 60°C); 10 to 90% relative humidity, non-condensing
Power requirements:	24 Vac ±10%, 50-60 Hz, 24 VA, or 26 Vdc ±10%, 10 W
Physical:	Rugged aluminum cover, removable screw terminal blocks
Weight:	1.4 lbs. (0.64 kg)

Dimensions:

Overall
Width: 11 5/16 in. (28.7 cm)
Height: 7 1/2 in. (19 cm)
Depth: 2 3/4 in. (7 cm) panel depth

Mounting Holes
Width: 10 13/16 in. (27.5 cm)
Height: 5 in. (12.7 cm)

All trademarks used herein are the property of their respective owners.

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