ZN141A VAV CONTROLLERS
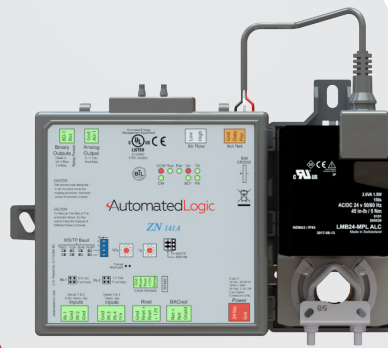
ZONE CONTROLLERS WITH ACTUATORS

CONTROLLER FOR THE WEBCTRL® BUILDING AUTOMATION SYSTEM

The ZN141A is a fully programmable, native BACnet Advanced Application Controller that provides zone level temperature and air quality control for pressure-independent VAV applications. Sophisticated pre-engineered control algorithms reduce energy consumption, extend actuator life, and increase occupant comfort. It communicates on an EIA-485 LAN using BACnet MS/TP or BACnet over ARCNET communications and connects seamlessly to the WebCTRL® building automation system.

KEY FEATURES AND BENEFITS

Application Features

- Versatile controller suitable for a variety of applications, including fan coil units, lighting, and exhaust fans

- Standard library of control programs available for most zoning applications

- Supports EIKON® graphical programming software, an object oriented tool that provides complete flexibility for any custom control sequence that you need

- Supports Automated Logic communicating sensors, which are available in a variety of zone sensing combinations and support setpoint adjustment and occupancy overrides

- Supports Automated Logic touchscreen interfaces for managing and troubleshooting the connected equipment easily

- Supports live, visual displays of control logic, helping operators troubleshoot and optimize system operation

- Quick and easy test and balancing process

Hardware Features

- Separable actuator with a 45 inch-pound (5 Nm) torque rating that can be mounted up to a maximum distance of 300 feet from the controller

- Controls up to 6 points (1 binary output, 4 universal inputs and 1 analog output)

- Precision differential pressure sensor and advanced VAV algorithm increase occupant comfort at both minimum and maximum design air flows, while also extending actuator life

- High-speed, native BACnet over ARC156 communications delivers high-speed response when you need it. BACnet over MS/TP communications is also supported.

- Fast, powerful and fully distributed control allows complete independence from any other devices in the system

- Large termination strips for easy installation

- Firmware upgrades can be performed remotely

The WebCTRL building automation system gives you the ability to understand your building operations and analyze the results. Integrate environmental, energy, security and safety systems into one powerful management tool that helps you reduce energy consumption, increase occupant comfort, and achieve sustainable building operations.

SPECIFICATIONS

Part #	ZN141A ZN141A Zone Controller
BACnet Conformance	BTL Tested and conforms to the BACnet Advanced Application Controller (B-AAC) Standard Device Profile, as defined in ANSI/ASHRAE (BACnet) Standard 135-2012 Annex L, Protocol Revision 9
Power	24 Vac +/- 10%, 50 - 60Hz, 14 VA | 26 Vdc (25 V min / 28.8 V max), 3W
Communication	
Act Net Port	Connects the actuator cable, the ZASF-A, and up to 2 OptiPoint™ smart valves
Actuator	Belimo brushless DC motor, torque 45 inch-pounds (5 Nm), runtime 154 seconds
BACnet Port	Communication with the controller network using ARC156 or MS/TP (9,600 bps - 76.8 kbps)
Rnet Port	12 Vdc @ 200mA supporting: -Up to 5 wireless and/or ZS sensors - freely mix ZS zone, ZS duct, ZS immersion and ZS outdoor sensors -1 OptiPoint IAQ display or OptiPoint equipment interface
Local Access Port	For system start-up and troubleshooting
Inputs - 4 inputs configurable for thermistor or dry contact. Inputs 1 and 2 configurable for 0-5 Vdc	
Resolution	10 bit A/D
Pulse Frequency	10 pulses per second. Minimum pulse width (on or off time) required for each pulse is 50 msec
Outputs	
Binary Output	1 N.O. binary output, relay contact rated at 1 A max. @ 24 Vac/Vdc
Analog Output	1 analog output, 0 - 10 Vdc (5 mA max)
Output Resolution	8 bit D/A
Status Indicators	LED's indicate status of communications, running, errors, power, and binary outputs
Environmental Range	32°F to 130°F (0 to 54.4°C), 10–90% relative humidity, non-condensing
Physical	Fire-retardent plastic ABS, UL94-5VA
Memory	512 kB non-volatile battery backed RAM, 1 MB flash memory, 16-bit memory bus
Real Time Clock	Real-time clock keeps track of time in the event of a power failure for at least 3 days
Integral Airflow Sensor	Precision differential pressure sensor 0-2 in. H20, sensitive down to +/-0.001 in. H20. Barbed tapered airflow connections accept 3/16 in. (0.48 cm) I.D. tubing. Readings across the 0-2 in. H20 range, accurate to +/-5% of full flow at 2 in. H20.
Microprocessor	High speed 16-bit microprocessor with ARCNET communication co-processor
Battery	10-year Lithium CR2032 battery retains data for a maximum of 10,000 hours
Compliance	**United States:** FCC compliant to Title CFR47, Part 15, Subpart B, Class A. UL Listed, File E143900; CCN PAZX, UL916, Energy Management Equipment; **AS/NZS:** RCM Mark 61000-6-3; **Canada:** UL Listed File E143900, CCN PAZX7, CAN/CSA C22.2 No. 205 Signal Equip., Industry Canada Compliant, ICES-003, Class A; CE Mark Compliant with 2014/30/EU, and RoHS Compliant: 2015/863/EU; **UKCA** Mark compliant with Electromagnetic Compatibility Regulations 2016 – Gov.UK and RoHS for Electrical and Electronic Equipment 2012.
Plastic Rating	Fire-retardant plastic ABS, UL94-5VA
BT485 Connector	Attach a BT485 (not included) to a controller at the beginning and end of a network segment to add bias and terminate a network segment.

Figure 1: Physical Dimensions

Controller Overall Dimensions

	in.	cm
Width:	6.4	16.3
Height:	5.7	14.5
Depth:	2.1	5.3
Weight:	1.8 lbs	0.82 kg

Assembled in the United States

Actuator Overall Dimensions

	in.	cm
Width:	3.0	7.6
Height:	5.9	15.0
Depth:	2.5	6.4

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