ZN141A VAV Controllers

Zone Controllers with Actuators

AUTOMATEDLOGIC
United Technologies

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 fan control

• 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, which uses real time operational data and aids in optimizing and troubleshooting system operations

• Quick & 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 will improve ease of installation

• Firmware upgrades can be performed remotely

System Benefits

• Connects seamlessly to the WebCTRL building automation system

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WebCTRL®

The WebCTRL® building automation system gives you the ability to understand your building operations and analyze the results. The WebCTRL system integrates environmental, energy, security and safety systems into one powerful management tool that allows you to reduce energy consumption, increase occupant comfort, and achieve sustainable building operations. Our web-based platform allows building managers to control and access information about their HVAC, lighting, central plant and critical processes on premises or remotely at any time of day.

WE MAKE BUILDINGS BETTER.
Next level building automation engineered to help you make smart decisions.

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Specifications

BACnet support	Conforms to the BACnet Advanced Application Controller (B-AAC) Standard Device Profile as defined in ANSI/ASHRAE Standard 135-2012 (BACnet) Annex L, Protocol Revision 9
Power	24 Vac ±10%, 50–60 Hz, 14 VA 26 Vdc (25 V min, 28.8 V max)
Actuator	Belimo brushless DC motor, torque 45 inch-pounds (5 Nm), runtime 154 seconds
Act Net port	To connect the actuator cable and the ZASF-A
BACnet port	For communication with the controller network using ARC156 or MS/TP (9600 bps–76.8 kbps)
Rnet port	Supports: • Up to 5 ZS sensors • One Wireless Adapter that communicates with up to 5 wireless sensors • One Equipment Touch
Local Access port	For system start-up and troubleshooting

Inputs
    Input resolution
    Input pulse frequency
	4 inputs configurable for thermistor or dry contact. Inputs 1 and 2 are also configurable for 0–5 Vdc
	10 bit A/D
	10 pulses per second. Minimum pulse width (on or off time) required for each pulse is 50 msec

Outputs
    Binary output
    Analog output
    Output resolution
	
	1 binary output, relay contact rated at 1 A max. @ 24 Vac/Vdc. Configured normally open
	1 analog output, 0–10 Vdc (5 mA max)
	8 bit D/A

Integral airflow sensor	Precision differential pressure sensor 0–2 in. H2O, sensitive down to ±0.001 in. H2O. Barbed tapered airflow connections accept 3/16 in. (4.75 mm) I.D. tubing. Allows for readings across the 0–2in. H2O range, accurate to ±5% of full flow at 2 in. H2O
Microprocessor Memory Battery	High speed 16-bit microprocessor with ARCNET communication co-processor 512 kB non-volatile battery-backed RAM, 1 MB Flash memory, 16-bit memory bus 10-year Lithium CR2032 battery retains the following data for a maximum of 10,000 hours during power outages: control programs, editable properties, schedules, and trends
Protection	Incoming power and network connections are protected by non-replaceable internal solid-state polyswitches that reset themselves when the condition that causes a fault returns to normal
BT485 connector	You attach a BT485 (not included) to a controller at the beginning and end of a network segment to add bias and to terminate a network segment
Status indicators	LED's indicate status of communications, running, errors, power, and binary outputs
Environmental op.range	32 to 130°F (0 to 54.4°C), 10–90% relative humidity, non-condensing
Physical	UL94-5VA plenum rated enclosure for installation in plenum (or other space for environmental air) in accordance with NEC Section 300.22 (c) and (d)
Listed by	UL-916 (PAZX), cUL-916 (PAZX7), FCC Part 15-Subpart B, Class B, CE
Weight	1.8 lbs (0.82 kg)

Controller overall dimensions
Width: 6.4 in. (16.3 cm)
Height: 5.7 in. (14.5 cm)
Depth: 2.1 in. (5.3 cm)

Actuator overall dimensions
Width: 3.0 in. (7.6 cm)
Height: 5.9 in. (15.0 cm)
Depth: 2.5 in. (6.4 cm)
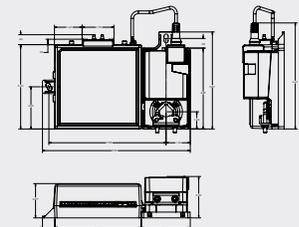
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