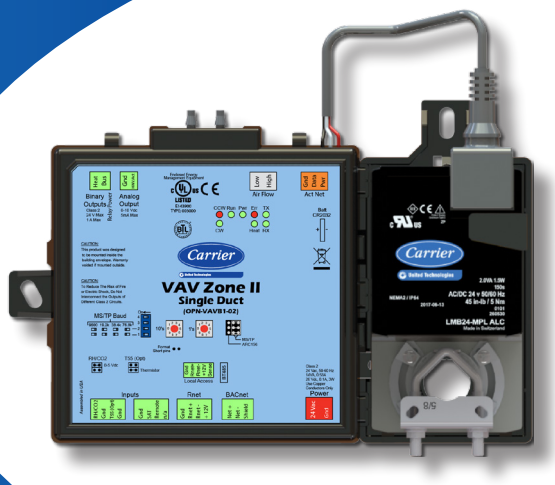
i-Vu® Building Automation System
VAV Zone II Single Duct

Part Number: OPN-VAVB1-02



The VAV Zone II Single Duct controller provides zone level temperature and air quality control for a variety of pressure-independent VAV applications. This advanced controller features a separable actuator for easy installation onto single duct air terminals. It also features native BACnet communications and plug-and-play connectivity to the Carrier i-Vu Building Automation System.

Application Features

- Sophisticated factory-engineered and tested control programs provide reliability and energy efficiency
- Pressure independent space temperature control
- Supports modulating hot water, single-position hot water, single-stage electric heat, or zone perimeter heat
- Built-in advanced control routines for zone level humidity control or zone level demand control ventilation (ASHRAE® 62)
- Adaptive optimal start and PID control for maximum occupant comfort
- Supports Carrier communicating room sensors, which allow for local setpoint adjustment and local override
- Quick and easy test & balancing process

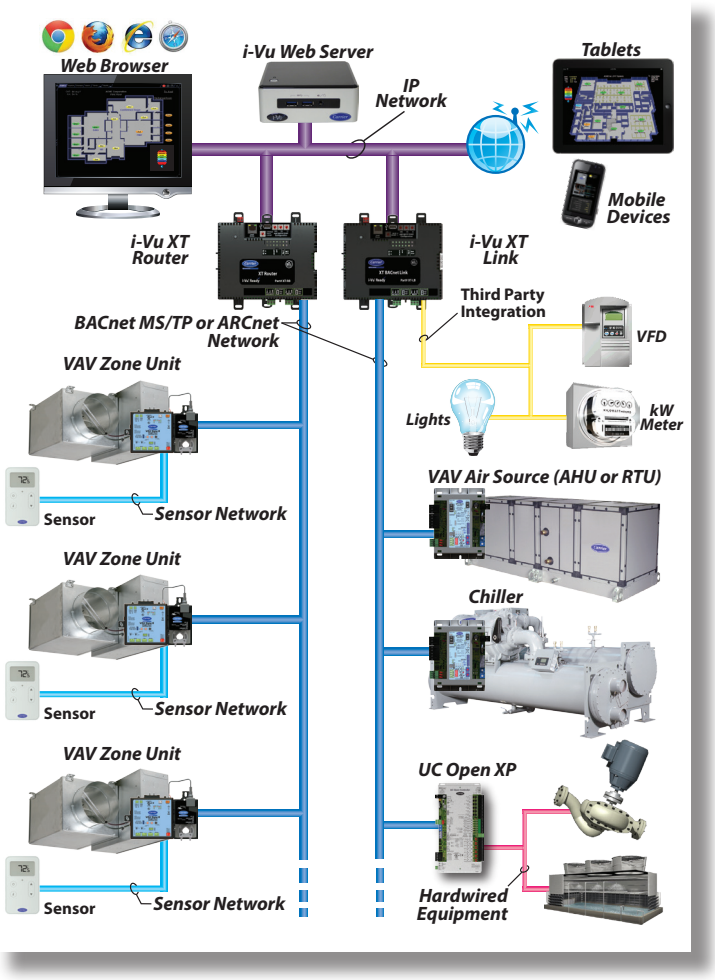
Hardware Features

- Separable brushless actuator for reliability and longevity
- Capable of system or stand-alone operation
- Native BACnet MS/TP or ARCNET communications

System Benefits

- Integrated Carrier airside linkage algorithm for plug-and-play integration with Carrier air sources
- Fully plug-and-play with the Carrier i-Vu Building Automation System
- Supports demand limiting for maximum energy savings
- Compatible with i-Vu Tenant Billing for tracking tenants' after-hours energy usage

The Carrier i-Vu Open Control System



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Specifications

BACnet Support	Advanced Application Controller (B-AAC), as defined in BACnet 135-2012 Annex L Protocol rev. 9
Communication Ports	**BACnet port:** EIA-485 port for BACnet MS/TP communications (9600 bps, 19.2 kbps, 38.4 kbps, & 76.8 kbps) or ARCNET 156 kbps; **Local Access port:** For system start-up and troubleshooting (115.2 kbps); **Rnet port:** For connecting Carrier communicating room sensors and Carrier's touchscreen user interface. **ACTnet port:** For connecting the actuator cable
Separable Actuator	Brushless DC motor, torque 45 inch-pounds (5Nm), runtime 154 seconds for 90 degree travel
Integral Pressure Sensor	Precision low flow AWM series 0–2 in. H_2O, sensitive down to ±0.001 in. H_2O. Barbed tapered airflow connections accept 3/16 in. (4.75 mm) I.D. tubing. Allows for readings across the 0–2 in. H_2O range, accurate to ±5% of full flow at 2 in. H_2O
Inputs	**3 analog inputs:** RH/CO2 (0-5V), T55 (10k thermistor), SAT (10k thermistor). AI's have 10 bit A/D resolution. **1 binary input:** Remote Occupancy (dry contact).
Outputs	**1 binary output:** HEAT1. Relay contact rated at 1A max @ 24VAC/VDC, configured normally open. **1 analog output:** Hot Water Valve/Actuator (HWV/ACT). AO is 0 to 10VDC (5mA maximum) with 8 bit D/A resolution using filtered PWM.
Protection	Power and network connections protected by non-replaceable internal solid state resettable polyswitches. Power, network and I/O connections also protected against voltage transient and surge events lasting no more than 10 msec.
Battery	10-year Lithium CR2032 battery: min of 10,000 hours of trend data retention during power outages
Status Indicators	LED status indicators for BACnet communication, run status, error, power, and all digital outputs
Controller Addressing	Rotary DIP switches set BACnet MS/TP or ARCNET address
Listed by	**United States:** FCC compliant to Title CFR47, Part 15, Subpart B, Class A; UL Listed, File E143900; CCN PAZX, UL 916, Energy Management Equipment; **ANZ:** RCM Mark AS/NZS 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
Environmental Operating Range	**Operating:** 32 to 130ºF (0 to 54ºC) 10 to 90% RH, non-condensing **Storage:** -24 to 140ºF (-30 to 60ºC) 0 to 90% RH, non-condensing
Power Requirements	24VAC ± 10%, 50-60Hz, 14 VA power consumption, 26VDC (25V min, 30V max), Single Class 2 source only, 100 VA or less

Dimensions

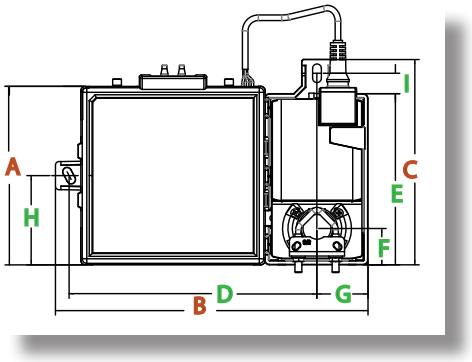
Overall

A: 5.10 in. (12.95 cm)
B: 8.93 in. (22.68 cm)
C: 5.87 in. (14.90 cm)

Mounting

D: 7 in. (17.78 cm)
E: 4.89 in. (12.42 cm)
F: 1.04 in. (2.64 cm)
G: 1.46 in. (3.71 cm)
H: 2.55 in. (6.48 cm)
I: 0.58 in. (1.47 cm)

Depth: 2.5 in. (6.4 cm)
Weight: 1.8 lbs (0.82 kg)
Minimum Shaft Diameter: 3/8 in. (.95 cm)
Maximum Shaft Diameter: 1/2 in. (1.27 cm)
Minimum Shaft Length: 1-3/4 in. (4.45 cm)



For more information, contact your local Carrier Controls Expert.

Controls Expert Locator:
www.carrier.com/controls-experts

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